DVP-F25

RMT-D151A/D151E

SERVICE MANUAL

Self Diagnosis Supported model

Photo : DVP-F25
RMT-D151E

US Model
Canadian Model
AEP Model
UK Model
Argentina Model
Mexico Model
Hong Kong Model
Singapore Model
Australian Model
New Zealand Model

SPECIFICATIONS

System

Laser: Semiconductor laser
Signal format system: PAL/NTSC (except US/Canadian model)
: NTSC (US/Canadian model)

Audio characteristics

Frequency response: DVD VIDEO (PCM 96 kHz): 2 Hz to 44 kHz (±1.0 dB)/DVD VIDEO (PCM 48 kHz): 2 Hz to 22 kHz (±0.5 dB)/CD: 2 Hz to 20 kHz (±0.5 dB)
Signal-to-noise ratio (S/N ratio): 115 dB (AUDIO OUT L/R jacks only)
Harmonic distortion: 0.003 %
Dynamic range: DVD VIDEO: 103 dB/CD: 99 dB
Wow and flutter: Less than detected value (±0.001% W PEAK)

When you play PCM sound tracks with a 96 kHz sampling frequency, the output signals from the DIGITAL OUT (OPTICAL) jack are converted to 48 kHz sampling frequency.

Outputs

(**Jack name:** Jack type/Output level/Load impedance)
AUDIO OUT L/R: Phono jack/2 Vrms/10 kilohms
DIGITAL OUT (OPTICAL): Optical output jack/-18 dBm (wave length: 660 nm)
COMPONENT VIDEO OUT (Y, C_B, C_R): Phono jack/Y: 1.0 Vp-p/C_B, C_R: 0.7 Vp-p/75 ohms
VIDEO OUT: Phono jack/1.0 Vp-p/75 ohms
S VIDEO OUT: 4-pin mini DIN/Y: 1.0 Vp-p/C: 0.3 Vp-p (PAL), 0.286 Vp-p (NTSC)/75 ohms

General

Power requirements:
US,Canadian,Mexico model:
120V AC, 60 Hz
Other country model:
220 to 240 V AC, 50/60 Hz
Power consumption: 9 W
Dimensions (approx.): 196 × 61 × 265 mm ($7\ ^3/_4 \times 2\ ^1/_2 \times 10\ ^1/_2$ in.) (width/height/depth) incl. projecting parts
Mass (approx.): 1.8 kg (3 lb 14 oz.)
Operating temperature: 5 °C to 35 °C (41 °F to 95 °F)
Operating humidity: 25 % to 80 %

Supplied accessories

See page 1-3.

Specifications and design are subject to change without notice.

DVD VIDEO COMPACT disc DIGITAL VIDEO

CD/DVD PLAYER

SONY

WARNING!!

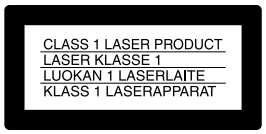
WHEN SERVICING, DO NOT APPROACH THE LASER EXIT WITH THE EYE TOO CLOSELY. IN CASE IT IS NECESSARY TO CONFIRM LASER BEAM EMISSION, BE SURE TO OBSERVE FROM A DISTANCE OF MORE THAN 25 cm FROM THE SURFACE OF THE OBJECTIVE LENS ON THE OPTICAL PICK-UP BLOCK.

CAUTION:

The use of optical instrument with this product will increase eye hazard.

CAUTION

Use of controls or adjustments or performance of procedures other than those specified herein may result in hazardous radiation exposure.



SAFETY-RELATED COMPONENT WARNING!!

COMPONENTS IDENTIFIED BY MARK ⚠ OR DOTTED LINE WITH MARK ⚠ ON THE SCHEMATIC DIAGRAMS AND IN THE PARTS LIST ARE CRITICAL TO SAFE OPERATION. REPLACE THESE COMPONENTS WITH SONY PARTS WHOSE PART NUMBERS APPEAR AS SHOWN IN THIS MANUAL OR IN SUPPLEMENTS PUBLISHED BY SONY.

Unleaded solder

Boards requiring use of unleaded solder are printed with the lead-free mark (LF) indicating the solder contains no lead.
(Caution: Some printed circuit boards may not come printed with the lead free mark due to their particular size.)

: LEAD FREE MARK

Unleaded solder has the following characteristics.

- Unleaded solder melts at a temperature about 40°C higher than ordinary solder.
  Ordinary soldering irons can be used but the iron tip has to be applied to the solder joint for a slightly longer time.
  Soldering irons using a temperature regulator should be set to about 350°C.
  Caution: The printed pattern (copper foil) may peel away if the heated tip is applied for too long, so be careful!
- Strong viscosity
  Unleaded solder is more viscous (sticky, less prone to flow) than ordinary solder so use caution not to let solder bridges occur such as on IC pins, etc.
- Usable with ordinary solder
  It is best to use only unleaded solder but unleaded solder may also be added to ordinary solder.

SAFETY CHECK-OUT

After correcting the original service problem, perform the following safety checks before releasing the set to the customer.

1. Check the area of your repair for unsoldered or poorly-soldered connections. Check the entire board surface for solder splashes and bridges.
2. Check the interboard wiring to ensure that no wires are "pinched" or contact high-wattage resistors.
3. Look for unauthorized replacement parts, particularly transistors, that were installed during a previous repair. Point them out to the customer and recommend their replacement.
4. Look for parts which, through functioning, show obvious signs of deterioration. Point them out to the customer and recommend their replacement.
5. Check the B+ voltage to see it is at the values specified.
6. Flexible Circuit Board Repairing
   - Keep the temperature of the soldering iron around 270˚C during repairing.
   - Do not touch the soldering iron on the same conductor of the circuit board (within 3 times).
   - Be careful not to apply force on the conductor when soldering or unsoldering.

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SECTION 1
GENERAL

This section is extracted from instruction manual. (3-077-370-41)

Precautions

On safety
- Caution – The use of optical instruments with this product will increase eye hazard.
- Should any solid object or liquid fall into the cabinet, unplug the player and have it checked by qualified personnel before operating it any further.

On power sources
- The player is not disconnected from the AC power source (mains) as long as it is connected to the wall outlet, even if the player itself has been turned off.
- If you are not going to use the player for a long time, be sure to disconnect the player from the wall outlet. To disconnect the AC power cord (mains lead), grasp the plug itself; never pull the cord.

On placement
- Place the player in a location with adequate ventilation to prevent heat build-up in the player.
- Do not place the player in a location near heat sources, or in a place subject to direct sunlight, excessive dust, or mechanical shock.
- Do not install the appliance in a confined space, such as a bookcase or built-in cabinet.

On operation
- If the player is brought directly from a cold to a warm location, or is placed in a very damp room, moisture may condense on the lenses inside the player. Should this occur, the player may not operate properly. In this case, remove the disc and leave the player turned on for about half an hour until the moisture evaporates.
- Do not insert a disc with non-standard shape (e.g., card, heart) into the player. The disc may not be ejected and cause a malfunction.
- When you move the player, take out any discs. If you don't, the disc may be damaged.

On adjusting volume

Do not turn up the volume while listening to a section with very low level inputs or no audio signals. If you do, the speakers may be damaged when a peak level section is played.

On installing the player on the wall

If the player falls down, a serious injury or damage may result. Observe the following instructions to prevent the player from falling down.
- Install the player on a wall strong enough to hold the player using two proper screws for the wall material and strength.
  Install the player on a vertical and flat wall where reinforcement is applied. If you are not sure about the wall strength or screws, contact a screw shop or installer.
- Install the player straight.
- Do not install the player at high position.
- Do not lean or hang on the player.
- Do not load anything on the player.
- Do not pull the connecting cords when the player is on the wall.
- Be careful not to trip on the connecting cords.
- When you operate the player, do not use excessive force to operate the player, or insert or remove the disc.
- When cleaning, do not put hand on the player or use excessive force.

On cleaning

Clean the cabinet, panel, and controls with a soft cloth slightly moistened with a mild detergent solution. Do not use any type of abrasive pad, scouring powder or solvent such as alcohol or benzine.

On cleaning discs

Do not use a commercially available cleaning disc. It may cause a malfunction.

IMPORTANT NOTICE

Caution: This player is capable of holding a still video image or on-screen display image on your television screen indefinitely. If you leave the still video image or on-screen display image displayed on your TV for an extended period of time, you risk permanent damage to your television screen. Projection televisions are especially susceptible to this.

If you have any questions or problems concerning your player, please consult your nearest Sony dealer.

About this Manual

- Instructions in this manual describe the controls on the remote. You can also use the controls on the player if they have the same or similar names as those on the remote.
- The meaning of the icons used in this manual is described below:

Icon	Meaning
DVD	Functions available for DVD VIDEOs or DVD-Rs/DVD-RWs in video mode
VCD	Functions available for VIDEO CDs or CD-Rs/CD-RWs in video CD format
DATA CD	Functions available for DATA CDs (CD-ROMs/CD-Rs/CD-RWs containing MP3* audio tracks)
CD	Functions available for music CDs or CD-Rs/CD-RWs in music CD format

* MP3 (MPEG1 Audio Layer 3) is a standard format defined by ISO (International Standard Organization)/MPEG which compresses audio data.

This Player Can Play the Following Discs

Format of discs	
DVD VIDEO	DVD VIDEO
VIDEO CD	COMPACT disc DIGITAL VIDEO
Music CD	COMPACT disc DIGITAL AUDIO

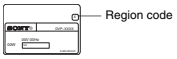
The "DVD VIDEO" logo is a trademark.

Region code

Your player has a region code printed on the bottom of the unit and only will play DVD VIDEO discs (playback only) labeled with identical region codes. This system is used to protect copyrights.

DVDs labeled (ALL) will also play on this player.

If you try to play any other DVD, the message "Playback prohibited by area limitations." will appear on the TV screen. Depending on the DVD, no region code indication may be labeled even though playing the DVD is prohibited by area restrictions.



Example of discs that the player cannot play

The player cannot play the following discs:
- All CD-ROMs (including PHOTO CDs)/ CD-Rs/CD-RWs other than those recorded in the following formats:
  –music CD format
  –video CD format
  –MP3 format that conforms to ISO9660* Level 1/Level 2, or its extended format, Joliet
- Data part of CD-Extras
- DVD-RWs in VR mode
- DVD-ROMs
- DVD Audio discs
- HD layer on Super Audio CDs

* A logical format of files and folders on CD-ROMs defined by ISO (International Standard Organization).

Also, the player cannot play the following discs:
- A DVD with a different region code.
- A disc that has a non-standard shape (e.g., card, heart).
- A disc with paper or stickers on it.
- A disc that has the adhesive of cellophane tape or a sticker still left on it.

Note

Some CD-Rs, CD-RWs, DVD-Rs, or DVD-RWs (in video mode) cannot be played on this player due to the recording quality or physical condition of the disc, or the characteristics of the recording device. Furthermore, the disc will not play if it has not been correctly finalized. For more information, see the operating instructions for the recording device.

→ continued

Note that discs created in the Packet Write format cannot be played.

Note on playback operations of DVDs and VIDEO CDs

Some playback operations of DVDs and VIDEO CDs may be intentionally set by software producers. Since this player plays DVDs and VIDEO CDs according to the disc contents the software producers designed, some playback features may not be available. Also, refer to the instructions supplied with the DVDs or VIDEO CDs.

Copyrights

This product incorporates copyright protection technology that is protected by method claims of certain U.S. patents, other intellectual property rights owned by Macrovision Corporation, and other rights owners. Use of this copyright protection technology must be authorized by Macrovision Corporation, and is intended for home and other limited viewing uses only unless otherwise authorized by Macrovision Corporation. Reverse engineering or disassembly is prohibited.

Notes about the Discs

- To keep the disc clean, handle the disc by its edge. Do not touch the surface.

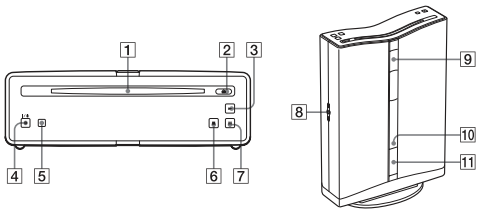
- Do not expose the disc to direct sunlight or heat sources such as hot air ducts, or leave it in a car parked in direct sunlight as the temperature may rise considerably inside the car.
- After pressing ⏏ on the player to eject the disc, do not leave the disc as it is. Remove it completely from the player.
- After playing, store the disc in its case.
- If glue is present on the outer edge of the disc, wipe the edge of the disc with the side of a pen or pencil so that the glue is spread evenly along the edge before inserting the disc into the player. Be sure not to touch the playback side of the disc when wiping the edge.
- If burrs remain on the outer edge of the disc, remove them by rubbing with the side of a pen or pencil. If burrs are not removed, discs may not load properly into the player, or fragments of plastic adhering to the playback side of the disc may cause skipping in the sound.
- Clean the disc with a cleaning cloth. Wipe the disc from the centre out.

- Do not use solvents such as benzine, thinner, commercially available cleaners, or anti-static spray intended for vinyl LPs.

Index to Parts and Controls

For more information, refer to the pages indicated in parentheses.

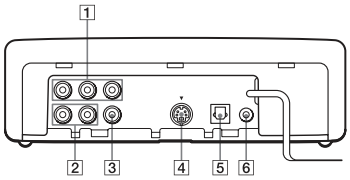
Front panel



1 Disc slot (31)
2 ⏏ (eject) button (32)
3 ► (playback) button (31)
4 I/⏻ (on/standby) button/indicator (31)
The indicator lights up in green when the power is on and lights up in red when the player is in standby mode.
5 (remote sensor) (14)
6 ■ (stop) button (32)
7 ❚❚ (pause) button (32)
8 Screw hole for the stand (27)
9 Disc window (31)
10 (remote sensor) (14)
11 Illumination (65)
Lights up in blue when the power is on.

→ continued

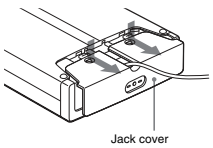
Rear panel



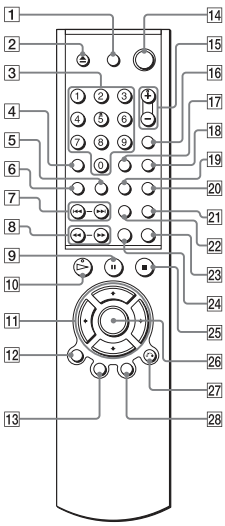
1 COMPONENT VIDEO OUT (Y, CB, CR) jacks (18)
2 AUDIO OUT L/R jacks (22) (23) (24)
3 VIDEO OUT jack (18)
4 S VIDEO OUT jack (18)
5 DIGITAL OUT (OPTICAL) jack (23) (24) (25)
6 CONTROL S IN jack (18)

To remove the jack cover

The player is sold with the jack cover attached. Press both of the parts marked with ▽ to remove the jack cover. You will find the jacks and the power cord illustrated above.



Remote



1 TV I/⏻ (on/standby) button (60)
2 ⏏ EJECT button (32)
3 Number buttons (35)
The number 5 button has a tactile dot.*
4 CLEAR button (39)
5 SUBTITLE button (51)
6 AUDIO button (48)
7 I◄◄/►►I PREV/NEXT (previous/next) buttons (32)
8 ◄I ◄◄/►► I► SCAN/SLOW buttons (33)
9 ❚❚ PAUSE button (32)
10 ▷ PLAY button (31)
The ▷ button has a tactile dot.*
11 ←/↑/↓/→ buttons (35)
12 DISPLAY button (12)
13 TOP MENU button (35)
14 I/⏻ (on/standby) button (31)
15 VOL (volume) +/– buttons (60)
The + button has a tactile dot.*
16 TV/VIDEO button (60)
17 ENTER button (33)
18 PICTURE MODE button (53)
19 ANGLE button (51)
20 SUR (surround) button (49)
21 TIME/TEXT button (46)
22 REPEAT button (42)
23 REPLAY button (32)
24 SEARCH MODE button (45)
25 ■ STOP button (32)
26 ENTER button (33)
27 ↶ RETURN button (36)
28 MENU button (35) (37)

* Use the tactile dot as a reference when operating the player.

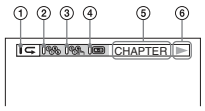
Guide to On-Screen Displays (Control Bar)

The following explains the Control Bar. The Control Bar is used for making adjustments to the settings or displaying information during playback.
The displayed contents differ according to the type of disc being played. The numbers in parentheses indicate reference pages.

Displaying the Control Bar during playback

The following displays appear when the DISPLAY button is pressed repeatedly during playback. You can select the setting that suits the current playback item and view the related information.

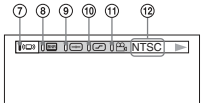
◆Display 1
The following play modes ①–④ can be set.
The indicator lights up in blue when activated.
Example: When Repeat Play is selected. (The display will differ when A-B Repeat Play is set.)



① Repeat Play (42)
② Shuffle Play (41)
③ Programme Play (39)
④ A-B Repeat Play (43)
⑤ Unit being repeated in this example.
⑥ Playback status (►Playback, ❚❚Pause, ■Stop, etc.)

⬇

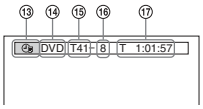
◆Display 2
The following play modes ⑦–⑫ can be set.
The indicator lights up in blue when activated.
Example: When "TVS" is set.



⑦ TVS (49)
⑧ "BNR" (52)
⑨ "CUSTOM PICTURE MODE" (53)
⑩ "DIGITAL VIDEO ENHANCER" (54)
⑪ "ANGLE" (51)
The indicator lights up in blue when various angles are recorded on the scene.
⑫ Appears when the player outputs the signal in NTSC format.

⬇

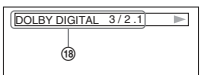
◆Display 3
The following playback information is displayed.
Example: When playing a DVD.



⑬ TIME/TEXT icon (46)
⑭ Disc type
⑮ Title number of the DVD (46)
⑯ Chapter number of the DVD (46)
⑰ Playing time or remaining time (46)

⬇

◆Display 4 (DVD playback only)



⑱ Format of the current audio signal (49)

⬇

◆No display

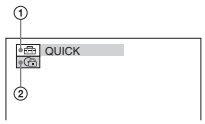
⬇

◆Return to Display 1

Displaying the Control Bar in stop mode

The following displays appear when the DISPLAY button is repeatedly pressed during stop mode. You can make basic adjustments and customize the player to suit your viewing preferences.

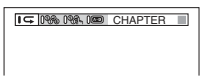
◆Display 1
The following settings can be made.



① SETUP (62)
• Select QUICK to make the minimum number of basic adjustments for using the player.
• Select CUSTOM to make a full range of adjustments.
• Select RESET to return the SETUP adjustments to the default settings.
② PARENTAL CONTROL (56)
• Set this to limit the playback of selected discs on this player.

⬇

◆Display 2
Shows the same information as Display 1 during playback.

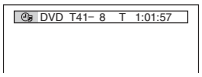


⬇

◆Display 3
Shows the same information as Display 2 during playback.

⬇

◆Display 4
Shows the same information as Display 3 during playback.



⬇

◆No display

⬇

◆Return to Display 1

Simple Start Guide

Quick Overview

A quick overview presented in this guide will give you enough information to start using the player for your enjoyment. To use the surround sound features of this player, refer to "Hookups" on page 17.

Notes

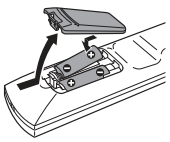
- You cannot connect this player to a TV that does not have a video input or SCART (EURO AV) jack.
- Be sure to disconnect the power of each component before connecting.

Step 1: Unpacking

Check that you have the following items:
- Audio/video cord (pinplug × 3 ⟷ pinplug × 3) (1)
- Remote commander (remote) (1)
- R6 (size AA) batteries (2)
- Stand (1)
- Screw (1)
- An EURO AV adaptor is included with some models.

Step 2: Inserting Batteries into the Remote

You can control the player using the supplied remote. Insert two R6 (size AA) batteries by matching the ⊕ and ⊖ ends on the batteries to the markings inside the compartment.
When using the remote, point it at the remote sensor ▯ on the player.

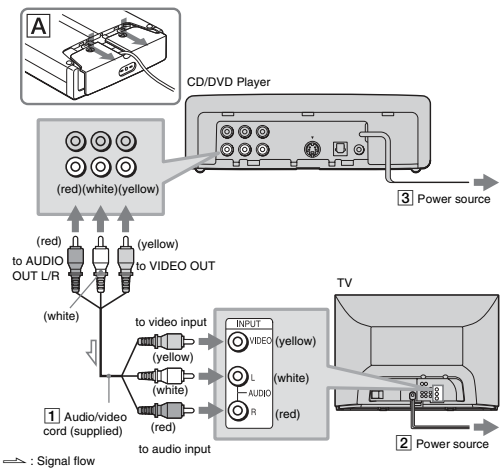


Notes

- Do not leave the remote in an extremely hot or humid place.
- Do not drop any foreign object into the remote casing, particularly when replacing the batteries.
- Do not expose the remote sensor to direct light from the sun or a lighting apparatus. Doing so may cause a malfunction.
- If you do not use the remote for an extended period of time, remove the batteries to avoid possible damage from battery leakage and corrosion.

Step 3: TV Hookups

Remove the jack cover from the player (see fig. A and page 10).
Connect the supplied audio/video cord and the power cord in the order (1–3) shown below.
Be sure to connect the power cord last.
After connecting the cords, attach the jack cover (page 26).



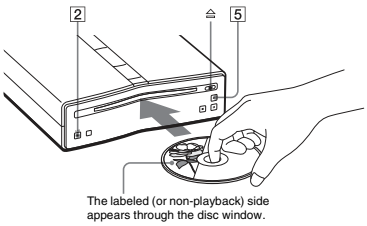
When connecting to a standard 4:3 screen TV
Depending on the TV type, the image of some discs may not fit your TV screen.
If you want to change the aspect ratio, please refer to page 64.

If your TV has a SCART (EURO AV) jack
Attach the supplied EURO AV adaptor to the TV, and connect to the player using the supplied audio/video cord.

When connecting to a monaural TV
Use a stereo-mono conversion cord (not supplied). Connect the VIDEO OUT jack on the player to the TV's video input jack, and connect the AUDIO OUT L/R jacks to the TV's audio input jack.

For Asian models only
To change the colour system
The colour system of the player is set to NTSC or PAL. If the on-screen menu of the player does not appear on the TV, change the colour system of the player to the same colour system (PAL or NTSC) of your TV. To change the colour system, hold I/⏻ down for a few seconds while pressing ❚❚ on the player.

Step 4: Playing a Disc



The labeled (or non-playback) side appears through the disc window.

1 Turn on the TV.

2 Press I/⏻ on the player.

3 Switch the input selector on your TV so that the signal from the player appears on the TV screen.

4 Insert the disc in the player so that the labeled (or non-playback) side appears through the disc window.

5 Press ►.
The player begins playing the disc.

After Step 5
Depending on the disc, a menu may be displayed on the TV screen. If so, select the item you want from the menu and play the DVD (page 35) or VIDEO CD disc (page 36).

To stop playing
Press ■.

To remove the disc
Press ⏏.
Remove the disc from the player.

To turn off the player
Press I/⏻. The player enters standby mode and the power indicator lights up in red.

Hooking Up the Player

Follow Steps 1 to 5 to hook up and adjust the settings of the player.
Before you start, disconnect the power cords, check that you have all of the supplied accessories, and insert the batteries into the remote (page 14). Remove the jack cover (page 10).

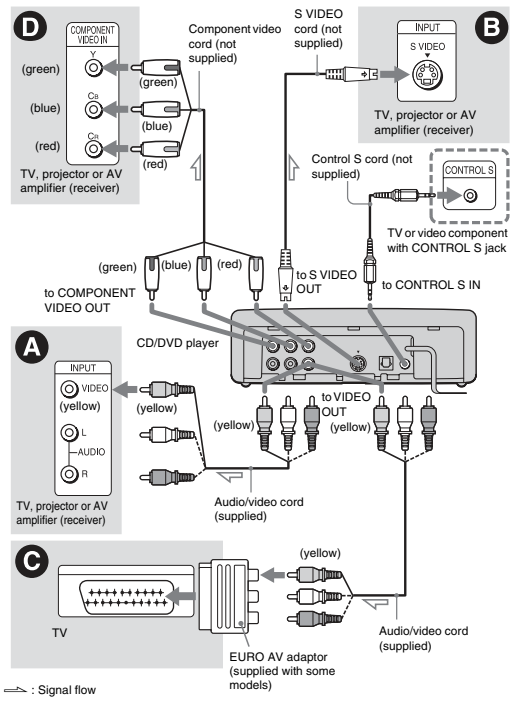
Notes

- Plug cords securely to prevent unwanted noise.
- Refer to the instructions supplied with the components to be connected.

→ continued

Step 1: Connecting the Video Cords

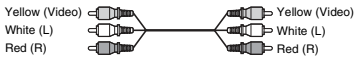
Connect this player to your TV monitor, projector, or AV amplifier (receiver) using a video cord. Select one of the patterns Ⓐ through Ⓒ, according to the input jack on your TV monitor, projector, or AV amplifier (receiver).



: Signal flow

Ⓐ If you are connecting to a video input jack

Connect the yellow plug of the audio/video cord (supplied) to the yellow (video) jacks. You will enjoy standard quality images.



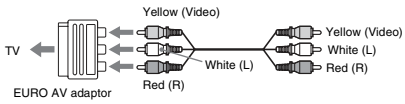
Use the red and white plugs to connect to the audio input jacks (page 22). (Do this if you are connecting to a TV only.)

Ⓑ If you are connecting to an S VIDEO input jack

Connect an S VIDEO cord (not supplied). You will enjoy high quality images.

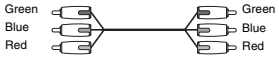
Ⓒ If you are connecting to a SCART (EURO AV) input jack

Connect the supplied EURO AV adaptor to the SCART (EURO AV) input jack of the TV and connect the player and the EURO AV adaptor using the audio/video cord (supplied). Connect the yellow plugs of the audio/video cord to the yellow (video) jacks. Use the red and white plugs to connect the audio input jack (page 22).



Ⓓ If you are connecting to a monitor, projector, or AV amplifier (receiver) having component video input jacks (Y, C_B, C_R)

Connect the component via the COMPONENT VIDEO OUT jacks using a component video cord (not supplied) or three video cords (not supplied) of the same kind and length. You will enjoy accurate colour reproduction and high quality images.



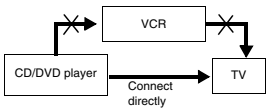
If your TV or video component has a CONTROL S connector

You can control the player by pointing the remote at the remote sensor on the TV or video component. This feature is convenient when you placed the player and the TV or video component away from each other. Connect the TV or video component via the CONTROL S IN connectors using the control S cord (not supplied). Refer to the instructions supplied with the component to be connected.

→ continued

Notes

• Connect the player directly to the TV. If you pass the player signals via the VCR, etc., you may not receive a clear image on the TV screen.



When you play a disc recorded in the NTSC colour system, the player outputs the video signal or the Setup Display etc. in the NTSC colour system and the picture may not appear on the PAL colour system televisions. In this case, remove the disc.

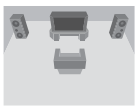
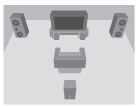
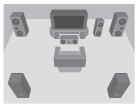
• **For Asian models only**
You can switch the player's colour system to match the colour system of the connected TV (page 15).

Step 2: Connecting the Audio Cords

Refer to the chart below to select the connection that best suits your system. Be sure to also read the instructions for the components you wish to connect.

Select a connection

Select one of the following connections, A through D.

Components to be connected	Connection	Your setup
TV • Surround effects: TVS DYNAMIC (page 50), TVS WIDE (page 50)	A (page 22)	Example
Stereo amplifier (receiver) and two speakers • Surround effects: TVS STANDARD (page 50) or **MD deck/DAT deck** • Surround effects: none	B (page 23)	Example 
AV amplifier (receiver) having a Dolby® Surround (Pro Logic) decoder and 3 to 6 speakers • Surround effects: Dolby Surround (Pro Logic) (page 67)	C (page 24)	Example 
AV amplifier (receiver) with a digital input jack having a Dolby Digital, MPEG audio, or DTS decoder and 6 speakers** • Surround effects: Dolby Digital (5.1ch) (page 67), DTS (5.1ch) (page 68), MPEG audio (5.1ch) (page 68)	D (page 25)	Example 

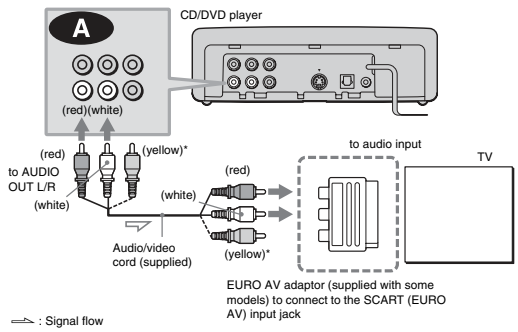
* Manufactured under license from Dolby Laboratories. "Dolby," "Pro Logic," and the double-D symbol are trademarks of Dolby Laboratories.

** "DTS" and "DTS Digital Out" are trademarks of Digital Theater Systems, Inc.

→ continued

A Connecting to your TV

This connection will use your TV speakers for sound.



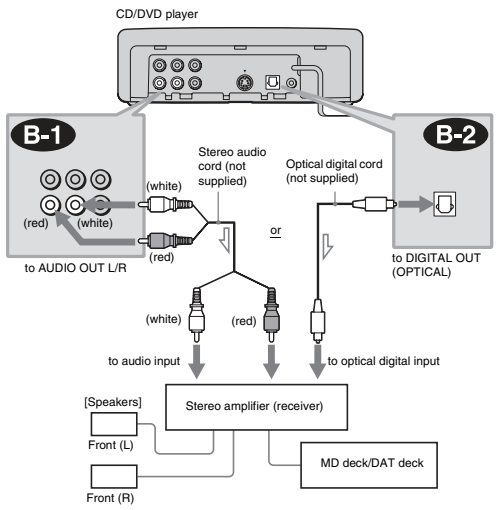
* The yellow plug is used for video signals (page 18).

Hint

When connecting to a monaural TV, use a stereo-mono conversion cord (not supplied). Connect the AUDIO OUT L/R jacks to the TV's audio input jack.

B Connecting to a stereo amplifier (receiver) and 2 speakers/Connecting to an MD deck or DAT deck

If the stereo amplifier (receiver) has audio input jacks L and R only, use B-1. If the amplifier (receiver) has a digital input jack, or when connecting to an MD deck or DAT deck, use B-2. In this case, you can also connect the player directly to the MD deck or DAT deck without using your stereo amplifier (receiver).



Hint

In connection B-1, you can use the supplied audio/video cord instead of using a separate audio cord.

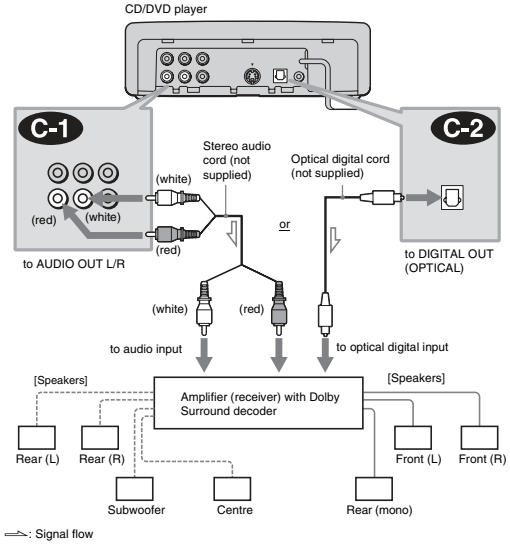
Note

If you select one of the TVS effects (page 49) while playing a disc, no sound will come from your speakers with the B-2 connection.

→ continued

C Connecting to an AV amplifier (receiver) having a Dolby Surround (Pro Logic) decoder and 3 to 6 speakers

You can enjoy the Dolby Surround effects only when playing Dolby Surround audio or multi-channel audio (Dolby Digital) discs.
If your amplifier (receiver) has L and R audio input jacks only, use C-1. If your amplifier (receiver) has a digital input jack, use C-2.

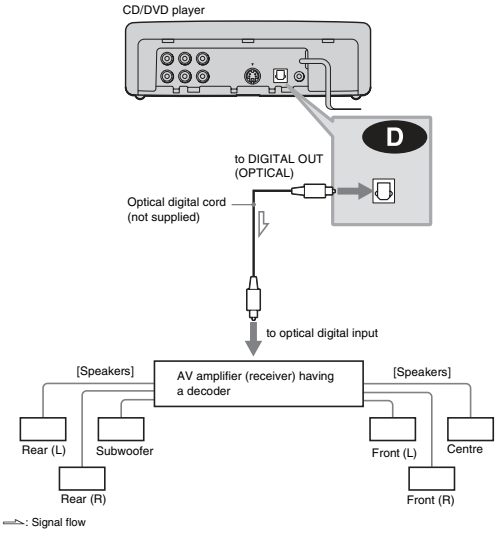


Note

When connecting 6 speakers, replace the monaural rear speaker with a centre speaker, 2 rear speakers and a subwoofer.

D Connecting to an AV amplifier (receiver) with a digital input jack having a Dolby Digital, MPEG audio, or DTS decoder, and 6 speakers

This connection will allow you to use the Dolby Digital, MPEG audio, or DTS decoder function of your AV amplifier (receiver). You are not able to enjoy the surround sound effects of this player.



Note

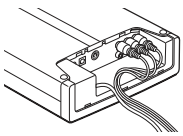
After you have completed the connection, be sure to set "DOLBY DIGITAL" to "DOLBY DIGITAL" and "DTS" to "ON" in Quick Setup (page 28). If your AV amplifier (receiver) has an MPEG audio decoder function, set "MPEG" to "MPEG" (page 68). Otherwise, no sound or a loud noise will come from the speakers.

Step 3: Attaching the Jack Cover and Stand

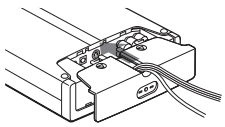
You can use the player laid flat, or in an upright position by attaching the supplied stand to the rear or side of the player. You can also install the player on the wall.

Attaching the jack cover (Using the player laid flat)

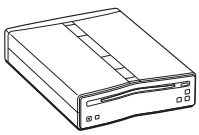
1 Gather all the connecting cords together and let them pass through the centre of the opening at the back of the player.



2 Attach the jack cover carefully so as not to pinch the cords.



3 Place the player flat on a level surface.



Notes

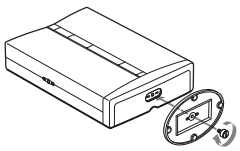
- Make sure that the connecting cords are not trapped by the jack cover.
- Do not apply downword force to the player with the disc window facing down. Doing so may cause scratches or damage to the player.
- If you use commercially available cords, it is recommended that you use cords similar in size to the cords provided with the player. If the cords are too thick or stiff, or the plug is too large, you may not be able to attach the jack cover securely. If you cannot attach the jack cover, you do not have to attach the jack cover.

Using the player in the upright position

Make sure you attach the supplied stand.

To stand the player on its rear

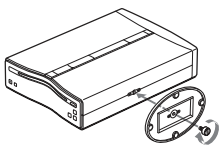
1 Attach the stand to the screw hole of the jack cover using the supplied screw.



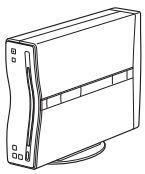
2 Place the player upright on the stand.

To stand the player on its side

1 Attach the stand to the screw hole on the side of the player using the supplied screw.



2 Place the player on the stand.

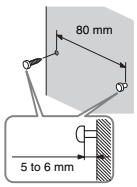


Notes

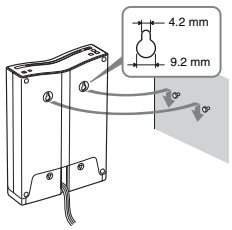
- Use the supplied stand only when you use the player in an upright position. Do not attach the stand when you use the player laid flat.
- To move the player, hold the player itself. If you hold the stand, it may break.
- Do not use the player in an upright position without attaching the stand. If you do not attach it, the player will be unstable and may fall over.

Installing the player on the wall

Attach the jack cover (page 26).
Fasten screws (not supplied) to the wall at the same height 80 mm apart. The screws should protrude by 5 to 6 mm.



Remove the seals covering the hanging holes. Hang the player on the screws. Push the player tightly against the wall.



Notes

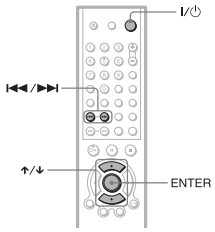
- Use the screws that matches the wall material and strength.
- Install the player on a vertical and flat wall where reinforcement is applied. Do not install the player if the wall is not vertical, flat or strong enough.
- Contact a screw shop or installer regarding the wall material or screws to be used.
- After the player has been used for long time on the wall, the wall behind or above the player may discolour or peel off by radiation of heat from the player depending on the wall material.
- Sony will refrain from any responsibility on the accident or damage caused by improper installation, lack of durability of the wall or screws, improper operation, natural calamity, etc.

Step 4: Connecting the Power Cord

Plug the player and TV mains leads (power cord) into a mains.

Step 5: Quick Setup

Follow the steps below to make the minimum number of basic adjustments for using the player. To skip an adjustment, press ▶▶I. To return to the previous adjustment, press I◀◀ .
The on-screen display differs depending on the player model.



1 Turn on the TV.

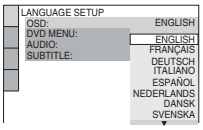
2 Press I/⏻.

3 Switch the input selector on your TV so that the signal from the player appears on the TV screen.

"Press [ENTER] to run QUICK SETUP." appears at the bottom of the screen. If this message does not appear, select "QUICK" under "SETUP" in the Control Bar to run Quick Setup (page 63).

4 Press ENTER without inserting a disc.

The Setup Display for selecting the language used in the on-screen display appears.
The available languages differ depending on the player model.

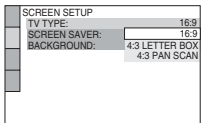


5 Press ↑/↓ to select a language.

The player uses the language selected here to display the menu and subtitles as well.

6 Press ENTER.

The Setup Display for selecting the aspect ratio of the TV to be connected appears.



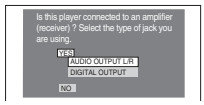
7 Press ↑/↓ to select the setting that matches your TV type.

◆ If you have a wide-screen TV or a 4:3 standard TV with a wide-screen mode
• 16:9 (page 64)

◆ If you have a 4:3 standard TV
• 4:3 LETTER BOX or 4:3 PAN SCAN (page 64)

8 Press ENTER.

The Setup Display for selecting the type of jack used to connect your amplifier (receiver) appears.


Is this player connected to an amplifier (receiver) ? Select the type of jack you are using.
YES
AUDIO OUTPUT L/R
DIGITAL OUTPUT
NO

9 Press ↑/↓ to select the type of jack (if any) you are using to connect to an amplifier (receiver), then press ENTER.

Choose the item that matches the audio connection you selected on pages 22 to 25 (A through D).

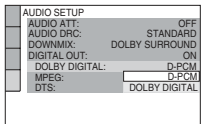
A
• If you connect just a TV and nothing else, select "NO." Quick Setup is finished and connections are complete.

B-1 C-1
• Select "AUDIO OUTPUT L/R." Quick Setup is finished and connections are complete.

B-2 C-2 D
• Select "DIGITAL OUTPUT." The Setup Display for "DOLBY DIGITAL" appears.

10 Press ↑/↓ to select the type of Dolby Digital signal you wish to send to your amplifier (receiver).

Choose the signal that matches the audio connection you selected on pages 23 to 25 (B through D).

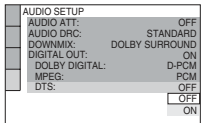


B-2 C-2
• D-PCM (page 67)

D
• DOLBY DIGITAL (only if the amplifier (receiver) has a Dolby Digital decoder) (page 67)

11 Press ENTER.

"DTS" is selected.



12 Press ↑/↓ to select whether or not you wish to send a DTS signal to your amplifier (receiver).

Choose the item that matches the audio connection you selected on pages 23 to 25 (B through D).

B-2 C-2
• OFF (page 68)

D
• ON (only if the amplifier (receiver) has a DTS decoder) (page 68)

13 Press ENTER.

Quick Setup is finished. All connections and setup operations are complete.
If your AV amplifier (receiver) has an MPEG audio decoder, adjust the "MPEG" setting (page 68).

→ continued

Enjoying the surround sound effects

To enjoy the surround sound effects of this player or your amplifier (receiver), set the following items as described below for the audio connection you selected on pages 23 to 25 (B through D). Each of these is the default setting and does not need to be adjusted when you first connect the player. Refer to page 62 for using the Setup Display.

Audio Connection (pages 22 to 25)

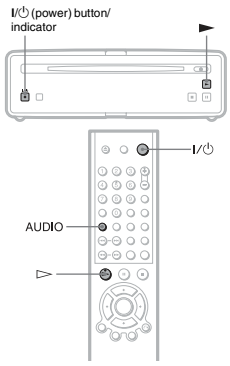
A
• No additional settings are needed.

B-1 C-1
• Set "DOWNMIX" to "DOLBY SURROUND" (page 67).
• If the sound distorts even when the volume is turned down, set "AUDIO ATT" to "ON" (page 66).

B-2 C-2 D
• Set "DOWNMIX" to "DOLBY SURROUND" (page 67).
• Set "DIGITAL OUT" to "ON" (page 67).

Playing Discs DVD VCD CD DATA CD

Depending on the DVD or VIDEO CD, some operations may be different or restricted. Refer to the operating instructions supplied with your disc.



1 Turn on your TV.

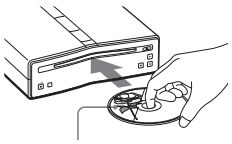
2 Press I/⏻.

The player turns on and the power indicator lights up in green.

3 Switch the input selector on your TV so that the signal from the player appears on the TV screen.

◆ When using an amplifier (receiver)
Turn on the amplifier (receiver) and select the appropriate channel so that you can hear sound from the player.

4 Insert a disc in the player.



The labeled (or non-playback) side appears through the disc window.

5 Press ▻.

The player starts playback (continuous play). Adjust the volume on the TV or the amplifier (receiver).
Depending on the disc, a menu may appear on the TV screen. For DVDs, see page 35. For VIDEO CDs, see page 36.

To turn off the player
Press I/⏻. The player enters standby mode.

Hint
You can have the player turn off automatically whenever you leave it in stop mode for more than 30 minutes. To turn on this function, set "AUTO POWER OFF" in "CUSTOM SETUP" to "ON" (page 65).

Notes on playing DTS sound tracks on a CD
• When playing DTS-encoded CDs, excessive noise will be heard from the analog stereo jacks. To avoid possible damage to the audio system, the consumer should take proper precautions when the analog stereo jacks of the player are connected to an amplification system. To enjoy DTS Digital Surround™ playback, an external 5.1-channel decoder system must be connected to the digital jack of the player.
• Set the sound to "STEREO" using the AUDIO button when you play DTS sound tracks on a CD (page 48).
• Do not play DTS sound tracks without first connecting the player to an audio component having a built-in DTS decoder. The player outputs the DTS signal via the DIGITAL OUT (OPTICAL) jack even if "DTS" in "AUDIO SETUP" is set to "OFF" in the Setup Display (page 68), and may

→ continued

affect your ears or cause your speakers to be damaged.

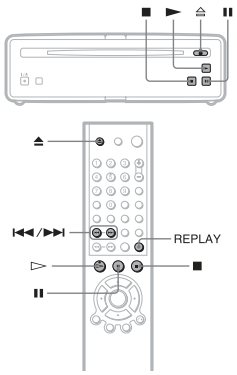
Notes on playing DVDs with a DTS sound track

- DTS audio signals are output only through the DIGITAL OUT (OPTICAL) jack.
- When you play a DVD with DTS sound tracks, set "DTS" to "ON" in "AUDIO SETUP" (page 68).
- If you connect the player to audio equipment without a DTS decoder, do not set "DTS" to "ON" in "AUDIO SETUP" (page 68). A loud noise may come out from the speakers, affecting your ears or causing the speakers to be damaged.

Notes

- When you insert an 8-cm (3-inch) disc, insert the disc slowly at the centre of the disc slot. If you cannot eject the disc, consult your nearest Sony dealer.
- No adapter is required in order to play 8-cm (3-inch) discs on this player. If an adapter is used, damage to the player may result; therefore, never use an adapter when playing 8-cm (3-inch) discs.

Additional operations



To	Operation
Stop	Press ■
Pause	Press ❚❚
Resume play after pause	Press ❚❚ or ► or ▷
Go to the next chapter, track, or scene in continuous play mode	Press ▶▶I
Go back to the previous chapter, track, or scene in continuous play mode	Press I◀◀
Stop play and remove the disc	Press ⏏ or ⏏
Replay the previous scene (DVD only)	Press REPLAY

Hint

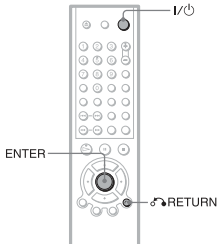
The Replay function is useful when you want to review a scene or dialog that you missed.

Note

You may not be able to use the Replay function with some scenes.

Locking the disc slot (Child Lock)

You can lock the disc slot to prevent children from ejecting a disc.



When the player is in standby mode, press RETURN, ENTER, and then I/⏻ on the remote.

"Locked" appears on the TV screen when you press the ⏏/⏏ button on the player or the remote.
The ⏏/⏏ button on the player and the remote do not work while the Child Lock is set.

To unlock the disc slot

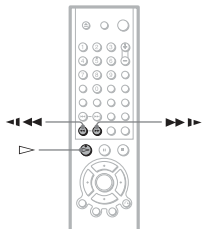
When the player is in standby mode, press RETURN, ENTER, and then I/⏻ again.

Note

Even if you select "RESET" under "SETUP" in the Control Bar (page 62), the disc slot remains locked.

Searching for a Particular Point on a Disc (Scan, Slow-motion Play)

You can quickly locate a particular point on a disc by monitoring the picture or playing back slowly.



Note

Depending on the DVD/VIDEO CD, you may not be able to do some of the operations described.

Locating a point quickly by playing a disc in fast forward or fast reverse (Scan) DVD VCD CD DATA CD

Press ◀I ◀◀ or ▶▶ I▶ while playing a disc. When you find the point you want, press ▷ to return to normal speed. Each time you press ◀I ◀◀ or ▶▶ I▶ during scan, the playback speed changes. Three speeds are available. With each press the indication changes as follows:

Playback direction
×2► (DVD/CD only) → 1▶▶ → 2▶▶

Opposite direction
×2◄ (DVD only) → 1◀◀ → 2◀◀

→ continued

The "×2►"/"×2◄" playback speed is about twice the normal speed. The "2▶▶"/"2◀◀" playback speed is faster than "1▶▶"/"1◀◀."

Watching frame by frame (Slow-motion play) DVD VCD

Press ◀I ◀◀ or ▶▶ I▶ when the player is in pause mode. To return to the normal speed, press ▷.
Each time you press ◀I ◀◀ or ▶▶ I▶ during Slow-motion play, the playback speed changes. Two speeds are available. With each press the indication changes as follows:

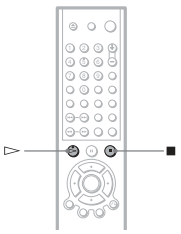
Playback direction
2 I▶ ⟷ 1 I▶

Opposite direction (DVD only)
2 ◀I ⟷ 1 ◀I

The "2 I►"/"2 ◄I" playback speed is slower than "1 I►"/"1 ◄I."

Resuming Playback from the Point Where You Stopped the Disc (Multi-disc Resume) DVD VCD

The player stores the point where you stopped the disc for up to 6 discs and resumes playback the next time you insert the same disc. When you store a resume playback point for the 7th disc, the resume playback point for the first disc is deleted.



1 While playing a disc, press ■ to stop playback.

"Disc resumes from this point." appears on the TV screen.

2 Press ▷.

The player starts playback from the point where you stopped the disc in Step 1.

Hints

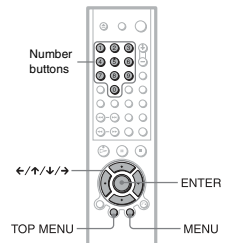
- To play from the beginning of the disc, press ■ twice, then press ▷.
- For CDs and DATA CDs, the player remembers the resume playback point for the current disc unless the disc is ejected, the power cord plug is disconnected, or only for DATA CDs, the player enters standby mode.

Notes

- "MULTI-DISC RESUME" in "CUSTOM SETUP" must be set to "ON" (default) for this function to work (page 66).
- The resume playback point for the current disc is cleared when:
  – you change the play mode.
  – you change the settings on the Setup Display.
- This function may not work with some discs.
- Resume Play does not work during Shuffle Play and Programme Play.

Using the DVD's Menu DVD

A DVD is divided into long sections of a picture or a music feature called "titles." When you play a DVD which contains several titles, you can select the title you want using the TOP MENU button.
When you play DVDs that allow you to select items such as the language for the subtitles and the language for the sound, select these items using the MENU button.



1 Press TOP MENU or MENU.

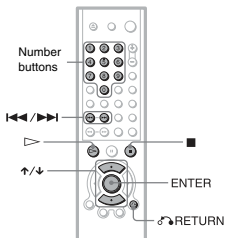
The disc's menu appears on the TV screen.
The contents of the menu vary from disc to disc.

2 Press ←/↑/↓/→ or the number buttons to select the item you want to play or change.

3 Press ENTER.

Playing VIDEO CDs with PBC Functions (PBC Playback) VCD

PBC (Playback Control) allows you to play VIDEO CDs interactively by following the menu on the TV screen.



1 Start playing a VIDEO CD with PBC functions.

The menu for your selection appears.

2 Select the item number and track you want using ↑/↓ or the number buttons.

3 Press ENTER.

4 Follow the instructions in the menu for interactive operations.

Refer to the instructions supplied with the disc, as the operating procedure may differ depending on the VIDEO CD.

To return to the menu

Press RETURN.

Hint

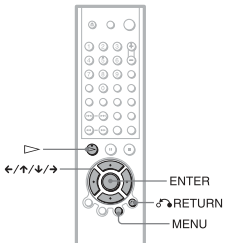
To play without using PBC, press ./> while the player is stopped to select a track, then press ▷ or ENTER.
"Play without PBC." appears on the TV screen and the player starts continuous play. You cannot play still pictures such as a menu.
To return to PBC playback, press ■ twice then press ▷.

Notes

- Depending on the VIDEO CD, "Press ENTER" in Step 3 may appear as "Press SELECT" in the instructions supplied with the disc. In this case, press ▷.
- The PBC functions of Super VCDs do not work with this player. Super VCDs are played in continuous play mode only.

Playing an MP3 Audio Track DATA CD

You can play back DATA CDs (CD-ROMs/CD-Rs/CD-RWs) recorded in MP3 (MPEG1 Audio Layer 3) format.



1 Insert a DATA CD in the player.

2 Press ▷.

The player starts to play the first MP3 audio track in the first album on the disc.

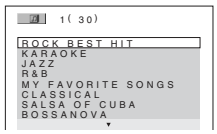
Notes

- The playback order may be different from the edited order. See "The playback order of MP3 audio tracks" (page 38) for details.
- This player can play MP3 audio tracks recorded in the following sampling frequencies: 32 kHz, 44.1 kHz, 48 kHz.

Selecting an album and track

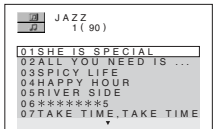
1 Press MENU.

The list of MP3 albums recorded on the DATA CD appears.



2 Select an album using ↑/↓ and press ENTER.

The list of tracks contained in the album appears.



3 Select a track using ↑/↓ and press ENTER.

The selected track starts playing.
When a track or album is being played, its title is shaded.

To go to the next or previous page

Press → or ←.

To return to the previous display

Press RETURN.

To turn off the display

Press MENU.

Notes

- Only the letters in the alphabet and numbers can be used for album or track names. Anything else is displayed as an asterisk (*).
- ID3 tags cannot be displayed.

→ continued

About MP3 audio tracks

You can play MP3 audio tracks on CD-ROMs, CD-Rs, or CD-RWs. However, the discs must be recorded according to ISO9660 level 1, level 2, or Joliet format for the player to recognize the tracks.
You can also play discs recorded in Multi Session.
See the instructions of the CD-R/RW device or recording software (not supplied) for details on the recording format.

To play a Multi Session CD

This player can play Multi Session CDs when an MP3 audio track is located in the first session. Any subsequent MP3 audio tracks, recorded in the later sessions, can also be played back.
When audio tracks and images in music CD format or video CD format are recorded in the first session, only the first session will be played back.

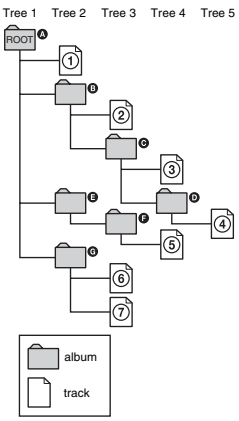
Notes

- If you put the extension ".MP3" to data not in MP3 format, the player cannot recognize the data properly and will generate a loud noise which could damage your speaker system.
- The player cannot play audio tracks in MP3PRO format.

The playback order of MP3 audio tracks

The playback order of albums and tracks recorded on a DATA CD is as follows.

◆Structure of disc contents



When you insert a DATA CD and press ▷, the numbered tracks are played sequentially, from ① through ⑦. Any sub-albums/tracks contained within a currently selected album take priority over the next album in the same tree. (Example: ❸ contains ❹ so ④ is played before ⑤.)
When you press MENU and the list of MP3 albums appears (page 37), the albums are arranged in the following order: ❶ → ❷ → ❸ → ❹ → ❺ → ❻. Albums that do not contain tracks (such as album ❺) do not appear in the list.

Hints

- If you add numbers (01, 02, 03, etc.) to the front of the track names, the tracks will be played in that order.
- Since a disc with many trees takes longer to start playback, place your albums within the first two trees.

Notes

- Depending on the software you use to create the DATA CD, the playback order may differ from the illustration above.
- The playback order above may not be applicable if there are more than a total of 200 albums and tracks in the DATA CD.
- The player can recognize up to 100 albums (the player will count just albums, including albums that do not contain MP3 audio tracks). The player will not play any albums beyond the first 100 albums. Of the first 100 albums, the player will play no more than a combined total of 200 albums and tracks.

Various Play Mode Functions (Programme Play, Shuffle Play, Repeat Play, A-B Repeat Play)

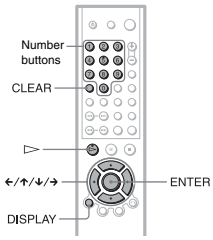
You can set the following play modes:
- Programme Play (page 39)
- Shuffle Play (page 41)
- Repeat Play (page 42)
- A-B Repeat Play (page 43)

Note

The play mode is canceled when:
– the player enters standby mode by pressing I/⏻.
– you eject the disc.

Creating your own programme (Programme Play) DVD VCD CD

You can play the contents of a disc in the order you want by arranging the order of the titles, chapters, or tracks on the disc to create your own programme.
You can programme up to 99 items.



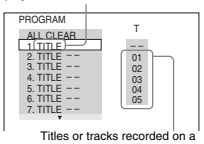
1 Press DISPLAY twice while the player is in stop mode.

The following Control Bar appears.

→ continued

2 Press ←/→ to select (PROGRAM), then press ENTER.

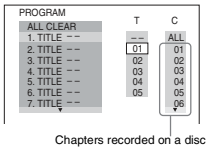
"TRACK" is displayed when you play a VIDEO CD or CD.



Titles or tracks recorded on a disc

3 Press →.

The cursor moves to the title or track row "T" (in this case, "01").



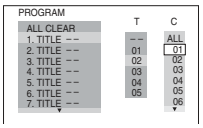
Chapters recorded on a disc

4 Select the title, chapter, or track you want to programme.

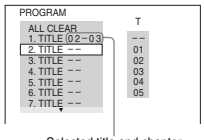
◆ When playing a DVD

For example, select chapter "03" of title "02."

Press ↑/↓ or the number buttons to select "02" under "T," then press ENTER.



Next, press ↑/↓ or the number buttons to select "03" under "C," then press ENTER.



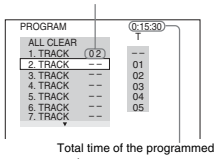
Selected title and chapter

◆ When playing a VIDEO CD or CD

For example, select track "02."

Press ↑/↓ or the number buttons to select "02" under "T," then press ENTER.

Selected track



Total time of the programmed tracks

5 To programme other titles, chapters, or tracks, repeat Steps 3 to 4.

The programmed titles, chapters, and tracks are displayed in the selected order.

6 Press ▷ to start Programme Play.

Programme Play begins.

When the programme ends, you can restart the same programme again by pressing ▷.

To stop Programme Play

Press CLEAR.

To turn off the display

Press DISPLAY repeatedly until the display is turned off.

To cancel or change a programme

1 Follow Steps 1 and 2 of "Creating your own programme (Programme Play)."

2 Select the programme number of the title, chapter, or track you want to cancel or change using ↑/↓ or the number buttons, and press →.

3 Follow Step 5 for new programming. To cancel a program, select "--" under "T," then press ENTER.

To cancel all the titles, chapters, or tracks in the programme

1 Follow Steps 1 and 2 of "Creating your own programme (Programme Play)."

2 Press ↑ and select "ALL CLEAR."

3 Press ENTER.

Hint

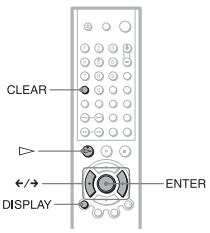
You can do Repeat Play or Shuffle Play of the programmed titles, chapters, or tracks. During Programme Play, follow the steps of "Repeat Play" (page 42) or "Shuffle Play" (page 41).

Note

When playing Super VCDs, the total time of the programmed tracks does not appear on the screen.

Playing in random order (Shuffle Play) DVD VCD CD

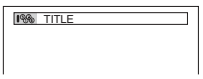
You can have the player "shuffle" titles, chapters, or tracks. Subsequent "shuffling" may produce a different playing order.



1 Press DISPLAY during playback.

The following Control Bar appears.

2 Press ←/→ to select (SHUFFLE), then press ENTER repeatedly to select the item to be shuffled.



◆ When playing a DVD
- TITLE
- CHAPTER

◆ When playing a VIDEO CD or CD
- TRACK

◆ When Programme Play is activated
- ON: shuffles titles, chapters, or tracks selected in Programme Play.

→ continued

To return to normal play

Press CLEAR, or select "OFF" in Step 2.

To turn off the Control Bar

Press DISPLAY repeatedly until the Control Bar is turned off.

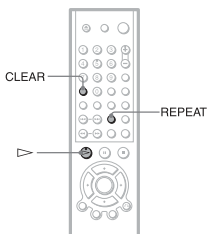
Hints
- You can set Shuffle Play while the player is stopped. After selecting the "SHUFFLE" option, press ▷. Shuffle Play starts.
- Up to 200 chapters in a disc can be played in random order when "CHAPTER" is selected.

Playing repeatedly (Repeat Play)

DVD VCD CD DATA CD

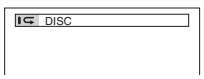
You can play all of the titles, albums or tracks on a disc or a single title, chapter, album, or track repeatedly.

You can use a combination of Shuffle or Programme Play modes.



1 Press REPEAT during playback.

The following Control Bar appears.



2 Press REPEAT repeatedly to select the item you want to set.

◆ When playing a DVD
- DISC: repeats all of the titles.
- TITLE: repeats the current title on a disc.
- CHAPTER: repeats the current chapter.

◆ When playing a VIDEO CD or CD
- DISC: repeats all of the tracks.
- TRACK: repeats the current track.

◆ When playing a DATA CD (MP3 audio)
- DISC: repeats all of the albums.
- ALBUM: repeats the current album.
- TRACK: repeats the current track.

◆ When Programme Play or Shuffle Play is activated
- ON: repeats Programme Play or Shuffle Play.

To return to normal play

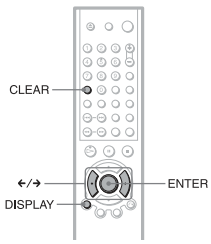
Press CLEAR, or select "OFF" in Step 2.

Hint

You can set Repeat Play while the player is stopped. After selecting the "REPEAT" option, press ▷. Repeat Play starts.

Repeating a specific portion (A-B Repeat Play) DVD VCD CD

You can play a specific portion of a title, chapter or track repeatedly. (This function is useful when you want to memorize lyrics, etc.)



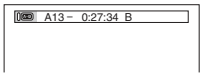
1 Press DISPLAY during playback.

The following Control Bar appears.

2 Press ←/→ to select (A-B REPEAT).

3 During playback, when you find the starting point (point A) of the portion to be played repeatedly, press ENTER.

The starting point (point A) is set.



4 When you reach the ending point (point B), press ENTER again.

The set points are displayed and the player starts repeating this specific portion.

→ continued

To return to normal play
Press CLEAR.

To turn off the Control Bar
Press DISPLAY repeatedly until the Control Bar is turned off.

Note

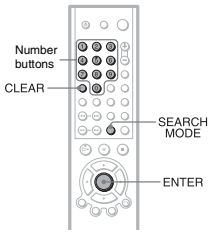
When you set A-B Repeat Play, the settings for Shuffle Play, Repeat Play, and Programme Play are canceled.

Searching for a Scene

Searching for a Title/ Chapter/Track/Index/ Scene (Search mode)

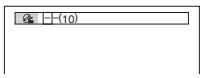
DVD VCD CD DATA CD

You can search a DVD by title or chapter, and you can search a VIDEO CD/CD/DATA CD by track, index, or scene. As titles and tracks are assigned unique numbers on the disc, you can select the desired one by entering its number. Or, you can search for a scene using the time code.



1 Press SEARCH MODE.

The following display appears.
"-- (∗∗)" appears next to the icon (∗∗ refers to a number).
The number in parentheses indicates the total number of titles, tracks, indexes, scenes, etc. of the disc.



2 Press SEARCH MODE repeatedly to select the search method.

◆ **When playing a DVD**
(TITLE)
(CHAPTER)
(TIME/TEXT)
(NUMBER INPUT)
Select "TIME/TEXT" to search for a starting point by inputting the time code.

◆ **When playing a VIDEO CD**
(TRACK)
(INDEX)

◆ **When playing a VIDEO CD with PBC Playback**
(SCENE)
(INDEX)

◆ **When playing a CD**
(TRACK)
(INDEX)

◆ **When playing a DATA CD (MP3 audio)**
(ALBUM)
(TRACK)

3 Select the number of the title, track, scene, time code, etc. you want using the number buttons.

For example, to find the scene at 2 hours, 10 minutes, and 20 seconds after the beginning, select "TIME/TEXT" in Step 2 and enter "2:10:20."

If you make a mistake
Cancel the number by pressing CLEAR, then select another number.

4 Press ENTER.

The player starts playback from the selected number.

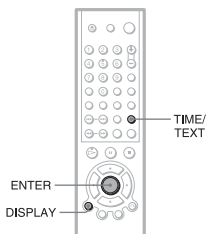
Hint

If you are playing a disc and it is necessary to enter a number, select "NUMBER INPUT" in Step 2.

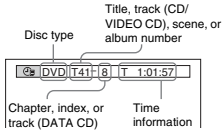
Viewing Information About the Disc

Checking the Playing Time and Remaining Time DVD VCD CD DATA CD

You can check the playing time and remaining time of the current title, chapter, or track. Also, you can check the DVD/CD text or track name (MP3 audio) recorded on the disc.



1 Press DISPLAY repeatedly during playback until (TIME/TEXT) appears.



2 Press ENTER repeatedly to change the time information.

The display and the kinds of time that you can change depend on the disc you are playing.

◆ **When playing a DVD**
- T ∗:∗:∗ (hours:minutes:seconds)
  Playing time of the current title
- T–∗:∗:∗
  Remaining time of the current title
- C ∗:∗:∗
  Playing time of the current chapter
- C–∗:∗:∗
  Remaining time of the current chapter

◆ **When playing a VIDEO CD (with PBC functions)**
- ∗:∗ (minutes:seconds)
  Playing time of the current scene

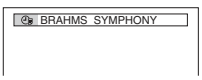
◆ **When playing a VIDEO CD (without PBC functions) or CD**
- T ∗:∗ (minutes:seconds)
  Playing time of the current track
- T–∗:∗
  Remaining time of the current track
- D ∗:∗
  Playing time of the current disc
- D–∗:∗
  Remaining time of the current disc

◆ **When playing a DATA CD (MP3 audio)**
- ∗:∗ (minutes:seconds)
  Playing time of the current track

◆ **When playing a Super VCD**
- T ∗:∗ (minutes:seconds)
  Playing time of the current track

To turn off the Control Bar
Press DISPLAY repeatedly until the Control Bar is turned off.

To check the DVD/CD text or track name (MP3 audio)
Press ENTER repeatedly in Step 2 to display text recorded on the DVD/CD/DATA CD. The DVD/CD text appears only when text is recorded in the disc. You cannot change the text. If the disc does not contain text, "NO TEXT" appears.
For DATA CDs, only the track name of the MP3 audio track appears.



Hints
- When playing VIDEO CDs with PBC functions, the scene number and the playing time are displayed.
- You can also check the time information and text by pressing TIME/TEXT repeatedly.

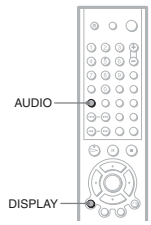
Notes
- Depending on the type of disc being played, the disc's text or track name may not be displayed.
- The player can only display the first level of the DVD/CD text, such as the disc name or title.
- Playing time of MP3 audio tracks may not be displayed correctly.

Sound Adjustments

Changing the Sound

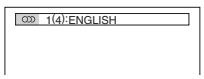
DVD VCD CD DATA CD

When playing a DVD recorded in multiple audio formats (PCM, Dolby Digital, MPEG audio, or DTS), you can change the audio format. If the DVD is recorded with multilingual tracks, you can also change the language.
With CDs, DATA CDs, or VIDEO CDs, you can select the sound from the right or left channel and listen to the sound of the selected channel through both the right and left speakers. For example, when playing a disc containing a song with the vocals on the right channel and the instruments on the left channel, you can hear the instruments from both speakers by selecting the left channel.



1 Press AUDIO during playback.

The following display appears.
The number in parentheses indicates the total number of available audio signals.



2 Press AUDIO repeatedly to select the desired audio signal.

◆ When playing a DVD
Depending on the DVD, the choice of language varies.
When 4 digits are displayed, they indicate a language code. Refer to "Language Code List" on page 74 to see which language the code represents.
When the same language is displayed two or more times, the DVD is recorded in multiple audio formats.

◆ When playing a VIDEO CD, CD, or DATA CD (MP3 audio)
The default setting is underlined.
- STEREO: The standard stereo sound
- 1/L: The sound of the left channel (monaural)
- 2/R: The sound of the right channel (monaural)

◆ When playing a Super VCD
The default setting is underlined.
- 1:STEREO: The stereo sound of the audio track 1
- 1:1/L: The sound of the left channel of the audio track 1 (monaural)
- 1:2/R: The sound of the right channel of the audio track 1 (monaural)
- 2:STEREO: The stereo sound of the audio track 2
- 2:1/L: The sound of the left channel of the audio track 2 (monaural)
- 2:2/R: The sound of the right channel of the audio track 2 (monaural)

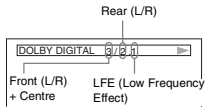
Note

While playing a Super VCD on which the audio track 2 is not recorded, no sound will come out when you select "2:STEREO," "2:1/L" or "2:2/R."

Checking the audio signal format DVD

If you press DISPLAY repeatedly during playback, the format of the current audio signal (Dolby Digital, MPEG audio, DTS, PCM, etc.) appears as shown below.

Example:
Dolby Digital 5.1 ch



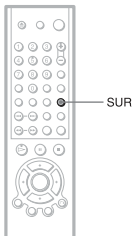
About audio signals
Audio signals recorded in a disc contain the sound elements (channels) shown below. Each channel is output from a separate speaker.
- Front (L)
- Front (R)
- Centre
- Rear (L)
- Rear (R)
- Rear (Monaural): This signal can be either the Dolby Surround Sound processed signals or the Dolby Digital sound's monaural rear audio signals.
- LFE (Low Frequency Effect) signal

Note

If "DTS" is set to "OFF" in "AUDIO SETUP," the DTS track selection option will not appear on the screen even if the disc contains DTS tracks (page 68).

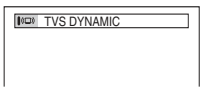
TV Virtual Surround Settings (TVS) DVD

When you connect a stereo TV or 2 front speakers, TVS (TV Virtual Surround) lets you enjoy surround sound effects by using sound imaging to create virtual rear speakers from the sound of the front speakers (L: left, R: right) without using actual rear speakers. TVS was developed by Sony to produce surround sound for home use using just a stereo TV.



1 Press SUR during playback.

The following Control Bar appears.



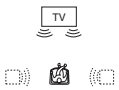
2 Press SUR repeatedly to select one of the TVS sounds.

Refer to the following explanations given for each item.
- TVS DYNAMIC
- TVS WIDE
- TVS NIGHT
- TVS STANDARD

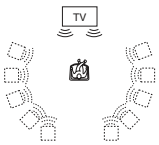
To cancel the setting
Select "OFF" in Step 2.

→ continued

◆TVS DYNAMIC
Creates virtual rear speakers from the sound of the front speakers (L, R) without using actual rear speakers (shown below).
This mode is effective when the distance between the front L and R speakers is short, such as with built-in speakers on a stereo TV.

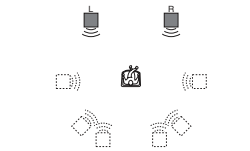


◆TVS WIDE
Creates virtual rear speakers from the sound of the front speakers (L, R) without using actual rear speakers. The virtual speakers are reproduced as shown in the illustration below.
This mode is effective when the distance between the front L and R speakers is short, such as with built-in speakers on a stereo TV.



◆TVS NIGHT
Large sounds, such as explosions, are suppressed, but the quieter sounds are unaffected. This feature is useful when you want to hear the dialog and enjoy the surround sound effects of "TVS WIDE" at low volume.

◆TVS STANDARD
Creates virtual rear speakers from the sound of the front speakers (L, R) without using actual rear speakers. The virtual speakers are reproduced as shown in the illustration below. Use this setting when you want to use TVS with 2 separate speakers.



L : Front speaker (left)
R : Front speaker (right)
□ : Virtual speaker

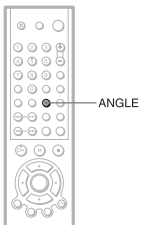
Notes

- When the playing signal does not contain a signal for the rear speakers, the surround effects will be difficult to hear.
- When you select one of the TVS modes, turn off the surround setting of the connected TV or amplifier (receiver).
- Make sure that your listening position is between and at an equal distance from your speakers, and that the speakers are located in similar surroundings.
- "TVS NIGHT" only works with Dolby Digital discs. However, not all discs will respond to the "TVS NIGHT" function in the same way.
- When you use the DIGITAL OUT (OPTICAL) jack to listen to MPEG audio signals and set "MPEG" to "MPEG" in "AUDIO SETUP," no sound will come from your speakers if you select one of the TVS modes.

Enjoying Movies

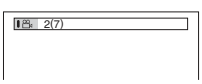
Changing the Angles DVD

If various angles (multi-angles) for a scene are recorded on the DVD, the indicator on the Control Bar lights up in blue. This means that you can change the viewing angle.



1 Press ANGLE during playback.

The following Control Bar appears.
The number in parentheses indicates the total number of angles.



2 Press ANGLE repeatedly to select the angle number.

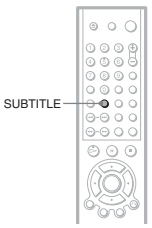
The scene changes to the selected angle.

Note

Depending on the DVD, you may not be able to change the angles even if multi-angles are recorded on the DVD.

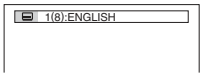
Displaying the Subtitles DVD

If subtitles are recorded on the discs, you can change the subtitles or turn them on and off whenever you want while playing a DVD.



1 Press SUBTITLE during playback.

The following display appears.
The number in parentheses indicates the total number of available subtitles.



2 Press SUBTITLE repeatedly to select the language.

Depending on the DVD, the choice of language varies.
When 4 digits are displayed, they indicate a language code. Refer to "Language Code List" on page 74 to see which language the code represents.

→ continued

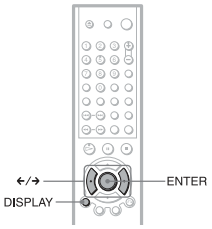
To turn off the subtitles
Select "OFF" in Step 2.

Note

Depending on the DVD, you may not be able to change the subtitles even if multilingual subtitles are recorded on it. You also may not be able to turn them off.

Adjusting the Picture Quality (BNR) DVD VCD

The Block Noise Reduction (BNR) function adjusts the picture quality by reducing the "block noise" or mosaic like patterns that appear on your TV screen.



1 Press DISPLAY twice during playback.

The following Control Bar appears.

2 Press ←/→ to select (BNR), then press ENTER repeatedly to select a level.

- 1: reduces the "block noise."
- 2: reduces the "block noise" more than 1.
- 3: reduces the "block noise" more than 2.

To cancel the "BNR" setting
Select "OFF" in Step 2.

To turn off the Control Bar
Press DISPLAY repeatedly until the Control Bar is turned off.

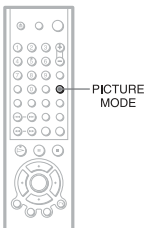
Notes

- If the outlines of the images on your screen should become blurred, set "BNR" to "OFF."
- Depending on the disc or the scene being played, the "BNR" effect may be hard to discern.

Adjusting the Playback Picture (CUSTOM PICTURE MODE)

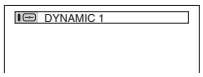
DVD VCD

You can adjust the video signal of the DVD or VIDEO CD from the player to obtain the picture quality you want. Choose the setting that best suits the programme you are watching.



1 Press PICTURE MODE during playback.

The following Control Bar appears.



2 Press PICTURE MODE repeatedly to select the setting you want.

The default setting is underlined.

- STANDARD: displays a standard picture.
- DYNAMIC 1: produces a bold dynamic picture by increasing the picture contrast and the colour intensity.
- DYNAMIC 2: produces a more dynamic picture than DYNAMIC 1 by further increasing the picture contrast and the colour intensity.
- CINEMA 1: enhances details in dark areas by increasing the black level.

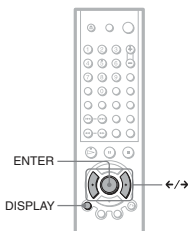
→ continued

- CINEMA 2: White colours become brighter and black colours become richer, and the colour contrast is increased.

Hint
When you watch a movie, "CINEMA 1" or "CINEMA 2" is recommended.

Enhancing the Playback Picture (DIGITAL VIDEO ENHANCER) DVD VCD

The Digital Video Enhancer (DVE) function makes the picture appear clear and crisp by enhancing the outlines of images on your TV screen. Also, this function can soften the images on the screen.



1 Press DISPLAY twice during playback.

The following Control Bar appears.

2 Press ←/→ to select (DIGITAL VIDEO ENHANCER), then press ENTER repeatedly to select a level.

- 1: enhances the outline.
- 2: enhances the outline more than 1.
- 3: enhances the outline more than 2.
- SOFT: softens the image (DVD only).

To cancel the "DIGITAL VIDEO ENHANCER" setting
Select "OFF" in Step 2.

To turn off the Control Bar
Press DISPLAY repeatedly until the Control Bar is turned off.

Note

Depending on the disc or the scene being played, noise found in the disc may become more apparent. If this happens, it is recommended that you use the BNR function (page 52) with the DVE function. If the condition still does not improve, reduce the Digital Video Enhancer level, or select "SOFT" (DVD only) in Step 2 above.

Locking Discs (CUSTOM PARENTAL CONTROL, PARENTAL CONTROL)

You can set two kinds of playback restrictions for the desired disc.

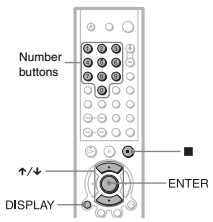
- Custom Parental Control
  You can set playback restrictions so that the player will not play inappropriate discs.
- Parental Control
  Playback of some DVDs can be limited according to a predetermined level such as the age of the users. Scenes may be blocked or replaced with different scenes.

The same password is used for both Parental Control and Custom Parental Control.

Custom Parental Control

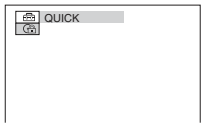
DVD VCD CD

You can set the same Custom Parental Control password for up to 40 discs. When you set the 41st-disc, the first disc is canceled.

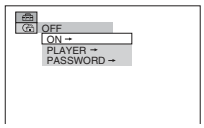


1 Insert the disc you want to lock.
If the disc is playing, press ■ to stop playback.

2 Press DISPLAY while the player is in stop mode.
The following Control Bar appears.

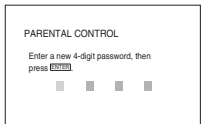


3 Press ↑/↓ to select (PARENTAL CONTROL), then press ENTER.
The options for "PARENTAL CONTROL" appear.



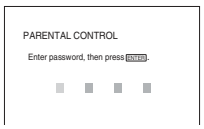
4 Press ↑/↓ to select "ON →," then press ENTER.

◆ If you have not entered a password
The display for registering a new password appears.



Enter a 4-digit password using the number buttons, then press ENTER.
The display for confirming the password appears.

◆ When you have already registered a password
The display for entering the password appears.



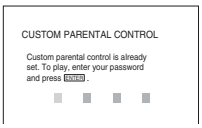
5 Enter or re-enter your 4-digit password using the number buttons, then press ENTER.
"Custom parental control is set." appears when you enter your password.

To turn off the Custom Parental Control function

1 Follow Steps 1 through 3 of "Custom Parental Control."
2 Press ↑/↓ to select "OFF →," then press ENTER.
3 Enter your 4-digit password using the number buttons, then press ENTER.

To play a disc for which Custom Parental Control is set

1 Insert the disc for which Custom Parental Control is set.
The "CUSTOM PARENTAL CONTROL" display appears.

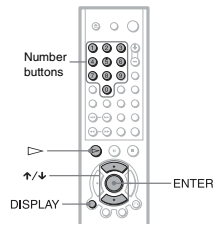


2 Enter your 4-digit password using the number buttons, then press ENTER.
The player is ready for playback.

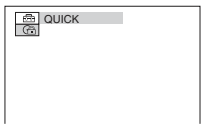
Hint
If you forget your password, enter the 6-digit number "199703" using the number buttons when the "CUSTOM PARENTAL CONTROL" display asks you for your password, then press ENTER. The display will ask you to enter a new 4-digit password.

Parental Control (limited playback) DVD

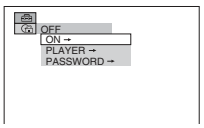
Playback of some DVDs can be limited according to a predetermined level such as the age of the users. The "PARENTAL CONTROL" function allows you to set a playback limitation level.



1 Press DISPLAY while the player is in stop mode.
The following Control Bar appears.

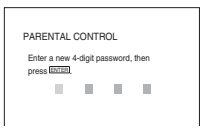


2 Press ↑/↓ to select (PARENTAL CONTROL), then press ENTER.
The options for "PARENTAL CONTROL" appear.



3 Press ↑/↓ to select "PLAYER →," then press ENTER.

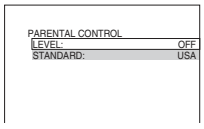
◆ If you have not entered a password
The display for registering a new password appears.



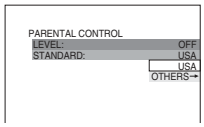
Enter a 4-digit password using the number buttons, then press ENTER.
The display for confirming the password appears.

◆ When you have already registered a password
The display for entering the password appears.

4 Enter or re-enter your 4-digit password using the number buttons, then press ENTER.
The display for setting the playback limitation level appears.

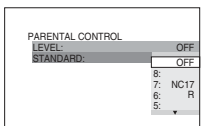


5 Press ↑/↓ to select "STANDARD," then press ENTER.
The selection items for "STANDARD" are displayed.

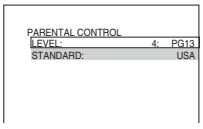


6 Press ↑/↓ to select a geographic area as the playback limitation level, then press ENTER.
The area is selected.
When you select "OTHERS →," select and enter a standard code in the table on page 59.

7 Press ↑/↓ to select "LEVEL," then press ENTER.
The selection items for "LEVEL" are displayed.



8 Select the level you want using ↑/↓, then press ENTER.
Parental Control setting is complete.



The lower the value, the stricter the limitation.

To turn off the Parental Control function

Set "LEVEL" to "OFF" in Step 8.

To play a disc for which Parental Control is set

1 Insert the disc and press ▷.
The display for entering your password appears.
2 Enter your 4-digit password using the number buttons, then press ENTER.
The player starts playback.

Hint
If you forget your password, remove the disc and repeat Steps 1 to 3 of "Parental Control (limited playback)." When you are asked to enter your password, enter "199703" using the number buttons, then press ENTER. The display will ask you to enter a new 4-digit password. After you enter a new 4-digit password in Step 4, replace the disc in the player and press ▷. When the display for entering your password appears, enter your new password.

Note
When you play DVDs which do not have the Parental Control function, playback cannot be limited on this player.

Area Code

Standard	Code number	Standard	Code number
Argentina	2044	Korea	2304
Australia	2047	Malaysia	2363
Austria	2046	Mexico	2362
Belgium	2057	Netherlands	2376
Brazil	2070	New Zealand	2390
Canada	2079	Norway	2379
Chile	2090	Pakistan	2427
China	2092	Philippines	2424
Denmark	2115	Portugal	2436
Finland	2165	Russia	2489
France	2174	Singapore	2501
Germany	2109	Spain	2149
India	2248	Sweden	2499
Indonesia	2238	Switzerland	2086
Italy	2254	Thailand	2528
Japan	2276	United Kingdom	2184

Changing the password

1 Press DISPLAY while the player is in stop mode.
The Control Bar appears.

2 Press ↑/↓ to select (PARENTAL CONTROL), then press ENTER.
The options for "PARENTAL CONTROL" appear.

3 Press ↑/↓ to select "PASSWORD →," then press ENTER.
The display for entering the password appears.

4 Enter your 4-digit password using the number buttons, then press ENTER.

5 Enter a new 4-digit password using the number buttons, then press ENTER.

6 To confirm your password, re-enter it using the number buttons, then press ENTER.

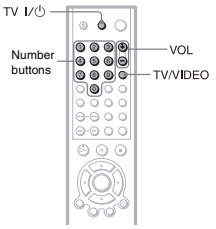
If you make a mistake entering your password
Press ← before you press ENTER and input the correct number.

If you make a mistake
Press ↩ RETURN.

To turn off the display
Press DISPLAY repeatedly until the display is turned off.

Controlling Your TV with the Supplied Remote

You can control the sound level, input source, and power switch of your TV with the supplied remote. Set the appropriate manufacturer's code.



1 While holding down TV I/⏻, press the number buttons to select your TV's manufacturer's code (see the table below).

2 Release TV I/⏻.

Code numbers of controllable TVs
If more than one code number is listed, try entering them one at a time until you find the one that works with your TV.

Manufacturer	Code number
Sony (default)	01
Grundig	11
Hitachi	24
JVC	33
LG	06
Panasonic	17, 49
Philips	06, 08
Samsung	06
Sanyo	25
Sharp	29
Thomson	43
Toshiba	38

You can control your TV using the buttons below.

By pressing	You can
TV I/⏻	Turn the TV on or off
VOL +/–	Adjust the volume of the TV
TV/VIDEO	Switch the TV's input source between the TV and other input sources

Notes

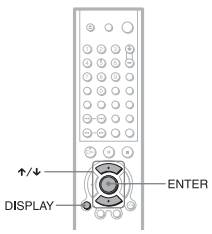
- Depending on the unit being connected, you may not be able to control your TV using some of the buttons.
- If you enter a new code number, the code number previously entered will be erased.
- When you replace the batteries of the remote, the code number you have set may be reset to the default setting. Set the appropriate code number again.

Using the Setup Display

By using the Setup Display, you can make various adjustments to items such as picture and sound. You can also set a language for the subtitles and the Setup Display, among other things. The on-screen displays differ depending on the player model. For details on each Setup Display item, see pages from 63 to 68.

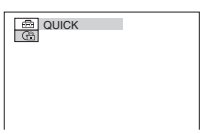
Note

Playback settings stored in the disc take priority over the Setup Display settings and not all the functions described may work.



1 Press DISPLAY when the player is in stop mode.

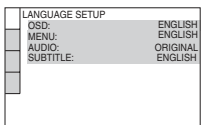
The Control Bar appears.



2 Press ↑/↓ to select (SETUP), then press ENTER.

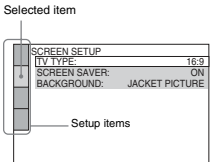
3 Press ↑/↓ to select "CUSTOM," then press ENTER.

The Setup Display appears.



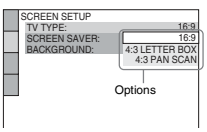
4 Press ↑/↓ to select the setup item from the displayed list: "LANGUAGE SETUP," "SCREEN SETUP," "CUSTOM SETUP," or "AUDIO SETUP." Then press ENTER.

The Setup item is selected.
Example: "SCREEN SETUP"



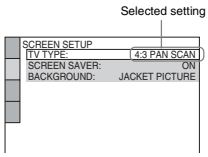
5 Select an item using ↑/↓, then press ENTER.

The options for the selected item appear.
Example: "TV TYPE"



6 Select a setting using ↑/↓, then press ENTER.

The setting is selected and setup is complete.
Example: "4:3 PAN SCAN"



To turn off the display
Press DISPLAY repeatedly until the display is turned off.

To enter the Quick Setup mode
Select "QUICK" in Step 3. Follow from Step 5 of the Quick Setup explanation to make basic adjustments (page 28).

To reset all of the "SETUP" settings

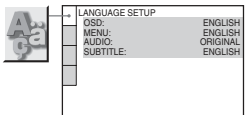
1 Select "RESET" in Step 3 and press ENTER.
2 Select "YES" using ↑/↓.
You can also quit the process and return to the Control Bar by selecting "NO" here.
3 Press ENTER.
All the settings explained on pages 63 to 68 return to the default settings. Do not press I/⏻ while resetting the player as it takes a few seconds to complete.

Setting the Display or Sound Track Language

(LANGUAGE SETUP)

"LANGUAGE SETUP" allows you to set various languages for the on-screen display or sound track.

Select "LANGUAGE SETUP" in the Setup Display. To use the display, see "Using the Setup Display" (page 62).



◆ OSD (On-Screen Display)
Switches the display language on the screen.

◆ MENU (DVD only)
You can select the desired language for the disc's menu.

◆ AUDIO (DVD only)
Switches the language of the sound track. When you select "ORIGINAL," the language given priority in the disc is selected.

◆ SUBTITLE (DVD only)
Switches the language of the subtitle recorded on the DVD.
When you select "AUDIO FOLLOW," the language for the subtitles changes according to the language you selected for the sound track.

Hint
If you select "OTHERS →" in "MENU," "SUBTITLE," and "AUDIO," select and enter a language code from "Language Code List" on page 74 using the number buttons.

Note

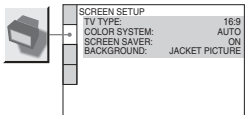
When you select a language in "MENU," "SUBTITLE," or "AUDIO" that is not recorded on the DVD, one of the recorded languages will be automatically selected.

Settings for the Display

(SCREEN SETUP)

Choose settings according to the TV to be connected.

Select “SCREEN SETUP” in the Setup Display. To use the display, see “Using the Setup Display” on page 62.
The default settings are underlined.
The on-screen displays differ depending upon the player model.



◆ TV TYPE
Selects the aspect ratio of the connected TV (4:3 standard or wide).

16:9	Select this when you connect a wide-screen TV or a TV with a wide mode function.
4:3 LETTER BOX	Select this when you connect a 4:3 screen TV. Displays a wide picture with bands on the upper and lower portions of the screen.
4:3 PAN SCAN	Select this when you connect a 4:3 screen TV. Automatically displays the wide picture on the entire screen and cuts off the portions that do not fit.

16:9

4:3 LETTER BOX

4:3 PAN SCAN

Note

Depending on the DVD, “4:3 LETTER BOX” may be selected automatically instead of “4:3 PAN SCAN” or vice versa.

◆ COLOR SYSTEM (VIDEO CD only; For Asian models only)
Selects the colour system when you play a VIDEO CD.

AUTO	Outputs the video signal in the system of the VIDEO CD, either PAL or NTSC. If your TV is the DUAL system, select AUTO.
PAL	Changes the video signal of an NTSC VIDEO CD and outputs it in the PAL system.
NTSC	Changes the video signal of a PAL VIDEO CD and outputs it in the NTSC system.

Notes

- You cannot change the colour system for DVDs.
- You can change the colour system of this player according to the connected TV. See page 15.

◆ SCREEN SAVER
The screen saver image appears when you leave the player in pause or stop mode for 15 minutes, or when you play back a CD or DATA CD (MP3 audio) for more than 15 minutes. The screen saver will help prevent your display device from becoming damaged (ghosting). Press ▷ to turn off the screen saver.

ON	Turns on the screen saver.
OFF	Turns off the screen saver.

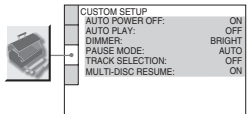
◆ BACKGROUND
Selects the background colour or picture on the TV screen in stop mode or while playing a CD or DATA CD (MP3 audio).

JACKET PICTURE	The jacket picture (still picture) appears, but only when the jacket picture is already recorded on the disc (CD-EXTRA, etc.). If the disc does not contain a jacket picture, the “GRAPHICS” picture appears.
GRAPHICS	A preset picture stored in the player appears.
BLUE	The background colour is blue.
BLACK	The background colour is black.

Custom Settings (CUSTOM SETUP)

Use this to set up playback related and other settings.

Select “CUSTOM SETUP” in the Setup Display. To use the display, see “Using the Setup Display” (page 62).
The default settings are underlined.
The on-screen displays differ depending upon the player model.



◆ AUTO POWER OFF
Switches the Auto Power Off setting on or off.
For Asian models, the default setting is “OFF.”

ON	The player enters standby mode when left in stop mode for more than 30 minutes.
OFF	Switches this function off.

◆ AUTO PLAY
Switches the Auto Play setting on or off. This function is useful when the player is connected to a timer (not supplied).

OFF	Switches this function off.
ON	Automatically starts playback when the player is turned on.

◆ DIMMER
Adjusts the lighting of the blue illumination on the player.

BRIGHT	Makes the lighting bright.
DARK 1	Makes the lighting dark.
DARK 2	Makes the lighting darker.

Settings and Adjustments

→ continued

◆ PAUSE MODE (DVD only)
Selects the picture in pause mode.

AUTO	The picture, including subjects that move dynamically, is output with no jitter. Normally select this position.
FRAME	The picture, including subjects that do not move dynamically, is output in high resolution.

◆ TRACK SELECTION (DVD only)
Gives the sound track which contains the highest number of channels priority when you play a DVD on which multiple audio formats (PCM, DTS, MPEG audio, or Dolby Digital format) are recorded.

OFF	No priority given.
AUTO	Priority given.

Notes

- When you set the item to “AUTO,” the language may change. The “TRACK SELECTION” setting has higher priority than the “AUDIO” settings in “LANGUAGE SETUP” (page 63).
- If you set “DTS” to “OFF” (page 68), the DTS sound track is not played even if you set “TRACK SELECTION” to “AUTO.”
- If PCM, DTS, MPEG audio, and Dolby Digital sound tracks have the same number of channels, the player selects PCM, DTS, Dolby Digital, and MPEG audio sound tracks in this order.

◆ MULTI-DISC RESUME (DVD/VIDEO CD only)
Switches the Multi-disc Resume setting on or off. Resume playback can be stored in memory for up to 6 different DVD/VIDEO CD discs (page 34).

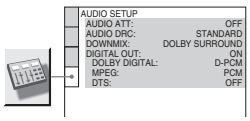
ON	Stores the resume settings in memory for up to 6 discs (The settings remain in memory even if you select “OFF.”)
OFF	Does not store the resume settings in memory. Playback restarts at the resume point only for the current disc in the player.

Settings for the Sound

(AUDIO SETUP)

“AUDIO SETUP” allows you to set the sound according to the playback and connection conditions.

Select “AUDIO SETUP” in the Setup Display. To use the display, see “Using the Setup Display” (page 62).
The default settings are underlined.



◆ AUDIO ATT (attenuation)
If the playback sound is distorted, set this item to “ON.” The player reduces the audio output level.
This function affects the output of the AUDIO OUT L/R jacks.

OFF	Normally, select this position.
ON	Select this when the playback sound from the speakers is distorted.

◆ AUDIO DRC (Dynamic Range Control) (DVD only)
Makes the sound clear when the volume is turned down when playing a DVD that conforms to “AUDIO DRC.” This affects the output from the following jacks:
– AUDIO OUT L/R jacks
– DIGITAL OUT (OPTICAL) jack only when “DOLBY DIGITAL” is set to “D-PCM” (page 67).

STANDARD	Normally select this position.
TV MODE	Makes the low sounds clear even if you turn the volume down.
WIDE RANGE	Gives you the feeling of being at a live performance.

◆ DOWNMIX (DVD only)
Switches the method for mixing down to 2 channels when you play a DVD which has rear sound elements (channels) or is recorded in Dolby Digital format. For details on the rear signal components, see “Checking the audio signal format” (page 49). This function affects the output of the following jacks:
– AUDIO OUT L/R jacks
– DIGITAL OUT (OPTICAL) jack when “DOLBY DIGITAL” is set to “D-PCM” (page 67).

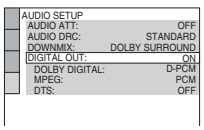
DOLBY SURROUND	Select this when the player is connected to an audio component that conforms to Dolby Surround (Pro Logic).
NORMAL	Select this when the player is connected to an audio component that does not conform to Dolby Surround (Pro Logic).

◆ DIGITAL OUT
Selects if audio signals are output via the DIGITAL OUT (OPTICAL) jack.

ON	Normally select this position. When you select “ON,” see “Setting the digital output signal” for further settings.
OFF	The influence of the digital circuit upon the analog circuit is minimal.

Setting the digital output signal

Switches the method of outputting audio signals when you connect a component such as an amplifier (receiver) or MD deck with a digital input jack.
For connection details, see page 21.
Select “DOLBY DIGITAL,” “MPEG” and “DTS” after setting “DIGITAL OUT” to “ON.”



If you connect a component that does not conform to the selected audio signal, a loud noise (or no sound) will come out from the speakers, affecting your ears or causing the speakers to be damaged.

◆ DOLBY DIGITAL (DVD only)
Selects the type of Dolby Digital signal.

D-PCM	Select this when the player is connected to an audio component lacking a built-in Dolby Digital decoder. You can select whether the signals conform to Dolby Surround (Pro Logic) or not by making adjustments to the “DOWNMIX” item in “AUDIO SETUP” (page 67).
DOLBY DIGITAL	Select this when the player is connected to an audio component with a built-in Dolby Digital decoder.

Settings and Adjustments

→ continued

◆ MPEG (DVD only)

Selects the type of MPEG audio signal.

PCM	Select this when the player is connected to an audio component lacking a built-in MPEG decoder. If you play MPEG audio sound tracks, the player outputs stereo signals via the DIGITAL OUT (OPTICAL) jack.
MPEG	Select this when the player is connected to an audio component with a built-in MPEG decoder.

◆ DTS (DVD only)

Selects whether or not to output DTS signal.

OFF	Select this when the player is connected to an audio component lacking a built-in DTS decoder.
ON	Select this when the player is connected to an audio component with a built-in DTS decoder.

Note

When you use the DIGITAL OUT (OPTICAL) jack to listen to MPEG audio signals and set "MPEG" to "MPEG" in "AUDIO SETUP," no sound will come from your speakers if you select one of the TVS modes.

Additional Information

Troubleshooting

If you experience any of the following difficulties while using the player, use this troubleshooting guide to help remedy the problem before requesting repairs. Should any problem persist, consult your nearest Sony dealer.

Power

The power is not turned on.

➡ Check that the AC power cord is connected securely.

Picture

There is no picture/picture noise appears.

➡ Re-connect the connecting cord securely.
➡ The connecting cord is damaged.
➡ Check the connection to your TV (page 18) and switch the input selector on your TV so that the signal from the player appears on the TV screen.
➡ The disc is dirty or flawed.
➡ If the picture output from your player goes through your VCR to get to your TV or if your player is connected to a combination TV/VIDEO player, the copy-protection signal applied to some DVD programmes could affect picture quality. If you still experience problems even when you connect your player directly to your TV, please try connecting your player to your TV's S VIDEO input (page 18).
➡ (For Asian models only)
If the colour system of your player does not match with that of your TV, change the colour system of the player. For details, see page 15. (You cannot change the colour system of the DVD disc itself.)
➡ The picture on the screen becomes black and white when you play a disc recorded in a colour system that is different from your TV.

Even though you set the aspect ratio in "TV TYPE" of "SCREEN SETUP," the picture does not fill the screen.

➡ The aspect ratio of the disc is fixed on your DVD.

Sound

There is no sound.

➡ Re-connect the connecting cord securely.
➡ The connecting cord is damaged.
➡ The player is connected to the wrong input jack on the amplifier (receiver) (page 23, 24, 25).
➡ The amplifier (receiver) input is not correctly set.
➡ The player is in pause mode or in Slow-motion Play mode.
➡ The player is in fast forward or fast reverse mode.
➡ If the audio signal does not come through the DIGITAL OUT (OPTICAL) jack, check the audio settings (page 67).
➡ While playing a Super VCD on which the audio track 2 is not recorded, no sound will come out when you select "2:STEREO," "2:1/L" or "2:2/R."

Sound is noisy.

➡ When playing a CD with DTS sound tracks, noise will come from the AUDIO OUT L/R jacks or DIGITAL OUT (OPTICAL) jack (page 31).

Sound distortion occurs.

➡ Set "AUDIO ATT" in "AUDIO SETUP" to "ON" (page 66).

The sound volume is low.

➡ The sound volume is low on some DVDs. The sound volume may improve if you set "AUDIO DRC" to "TV MODE" (page 66).
➡ Set "AUDIO ATT" in "AUDIO SETUP" to "OFF" (page 66).

Operation

The remote does not function.

➡ There are obstacles between the remote and the player.
➡ The distance between the remote and the player is too far.
➡ The remote is not pointed at the remote sensor on the player.

→ continued

➡ The remote sensor of the player is exposed to strong light.
➡ The batteries in the remote are weak.

The disc does not play.

➡ There is no disc inside.
➡ The disc is turned over.
Insert the disc with the labeled (or non-playback) side facing the disc window.
➡ The player cannot play certain discs (page 7).
➡ The region code on the DVD does not match the player.
➡ Moisture has condensed inside the player (page 3).
➡ The player cannot play CD-Rs, CD-RWs, DVD-Rs, or DVD-RWs (video mode) that are not finalized (page 7).

"Data error" appears when you play a DATA CD.

➡ The MP3 audio track you want to play is broken.
➡ The data is not MPEG1 Audio Layer 3 data.

The MP3 audio track cannot be played (page 38).

➡ The DATA CD is not recorded in the MP3 format that conforms to ISO9660 Level 1/ Level 2 or Joliet.
➡ The MP3 audio track does not have the extension ".MP3."
➡ The data is not formatted in MP3 even though it has the extension ".MP3."
➡ The data is not MPEG1 Audio Layer 3 data.
➡ The player cannot play audio tracks in MP3PRO format.

The title of the MP3 audio album or track is not correctly displayed.

➡ The player can only display numbers and alphabet. Other characters are displayed as asterisks.

The disc does not start playing from the beginning.

➡ Programme Play, Shuffle Play, Repeat Play, or A-B Repeat Play has been selected (page 39).
➡ Resume play has taken effect (page 34).

The player starts playing the disc automatically.

➡ The disc features an auto playback function.
➡ "AUTO PLAY" in "CUSTOM SETUP" is set to "ON" (page 65).

Playback stops automatically.

➡ While playing discs with an auto pause signal, the player stops playback at the auto pause signal.

You cannot perform some functions such as Stop, Search, Slow-motion Play, Repeat Play, Shuffle Play, or Programme Play.

➡ Depending on the disc, you may not be able to do some of the operations above. See the operating manual that comes with the disc.

The language for the sound track cannot be changed.

➡ Try using the DVD's menu instead of the direct selection button on the remote (page 35).
➡ Multilingual tracks are not recorded on the DVD being played.
➡ The DVD prohibits changing of the language for the sound track.

The subtitle language cannot be changed or turned off.

➡ Try using the DVD's menu instead of the direct selection button on the remote (page 35).
➡ Multilingual subtitles are not recorded on the DVD being played.
➡ The DVD prohibits changing of the subtitles.

The angles cannot be changed.

➡ Try using the DVD's menu instead of the direct selection button on the remote (page 35).
➡ Multi-angles are not recorded on the DVD being played.
➡ The angle can only be changed when the indicator lights up in blue on the Control Bar (page 51).
➡ The DVD prohibits changing of the angles.

The player does not operate properly.

➡ When static electricity, etc., causes the player to operate abnormally, unplug the player.

Five numbers or letters are displayed on the screen.

➡ The self-diagnosis function was activated. (See the table on page 71.)

The disc does not eject and "Locked" appears on the TV screen.

➡ Child Lock is set (page 33).

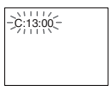
The disc does not enter or eject.

➡ Moisture has condensed inside the player (page 3).
➡ The disc is non-standard shaped (page 3).
➡ The disc does not enter if there is an another disc inside.

Self-diagnosis Function

(When letters/numbers appear in the display)

When the self-diagnosis function is activated to prevent the player from malfunctioning, a five-character service number (e.g., C 13 00) with a combination of a letter and four digits appears on the screen. In this case, check the following table.



First three characters of the service number	Cause and/or corrective action
C 13	The disc is dirty. ➡ Clean the disc with a soft cloth (page 8).
C 31	The disc is not inserted correctly. ➡ Re-insert the disc correctly.
E XX (xx is a number)	To prevent a malfunction, the player has performed the self-diagnosis function. ➡ Contact your nearest Sony dealer or local authorized Sony service facility and give the 5-character service number. Example: E 61 10

Glossary

Chapter (page 45)
Sections of a picture or a music feature that are smaller than titles. A title is composed of several chapters. Depending on the disc, no chapters may be recorded.

Dolby Digital (page 25, 67)
Digital audio compression technology developed by Dolby Laboratories. This technology conforms to 5.1-channel surround sound. The rear channel is stereo and there is a discrete subwoofer channel in this format. Dolby Digital provides the same 5.1 discrete channels of high quality digital audio found in Dolby Digital cinema audio systems. Good channel separation is realized because all of the channel data are recorded discretely and little deterioration is realized because all channel data processing is digital.

Dolby Surround (Pro Logic) (page 24, 67)
Audio signal processing technology that Dolby Laboratories developed for surround sound. When the input signal contains a surround component, the Pro Logic process outputs the front, centre and rear signals. The rear channel is monaural.

DTS (page 25, 68)
Digital audio compression technology that Digital Theater Systems, Inc. developed. This technology conforms to 5.1-channel surround sound. The rear channel is stereo and there is a discrete subwoofer channel in this format. DTS provides the same 5.1 discrete channels of high quality digital audio.
Good channel separation is realized because all of the channel data is recorded discretely and little deterioration is realized because all channel data processing is digital.

DVD (page 7)
A disc that contains up to 8 hours of moving pictures even though its diameter is the same as a CD.
The data capacity of a single-layer and single-sided DVD is 4.7 GB (Giga Byte), which is 7 times that of a CD. The data capacity of a double-layer and single-sided DVD is 8.5 GB, a single-layer and double-sided DVD is 9.4 GB, and double-layer and double-sided DVD is 17 GB.
The picture data uses the MPEG 2 format, one of the worldwide standards of digital compression technology. The picture data is compressed to about 1/40 (average) of its original size. The DVD also uses a variable rate coding technology that changes the data to be allocated according to the status of the picture. Audio information is recorded in a multi-channel format, such as Dolby Digital, allowing you to enjoy a more real audio presence.
Furthermore, various advanced functions such as the multi-angle, multilingual, and Parental Control functions are provided with the DVD.

Index (CD)/Video Index (VIDEO CD) (page 45)
A number that divides a track into sections to easily locate the point you want on a CD or VIDEO CD. Depending on the disc, no index may be recorded.

MPEG audio (page 25, 68)
International standard coding system used to compress audio digital signals authorized by ISO/IEC. MPEG 1 conforms to up to 2-channel stereo. MPEG 2, used on DVDs, conforms to up to 7.1-channel surround.

Scene (page 45)
On a VIDEO CD with PBC (playback control) functions, the menu screens, moving pictures and still pictures are divided into sections called “scenes.”

Title (page 45)
The longest section of a picture or music feature on a DVD, movie, etc., in video software, or the entire album in audio software.

Track (page 45)
Sections of a picture or a music feature on a CD or VIDEO CD (the length of a song).

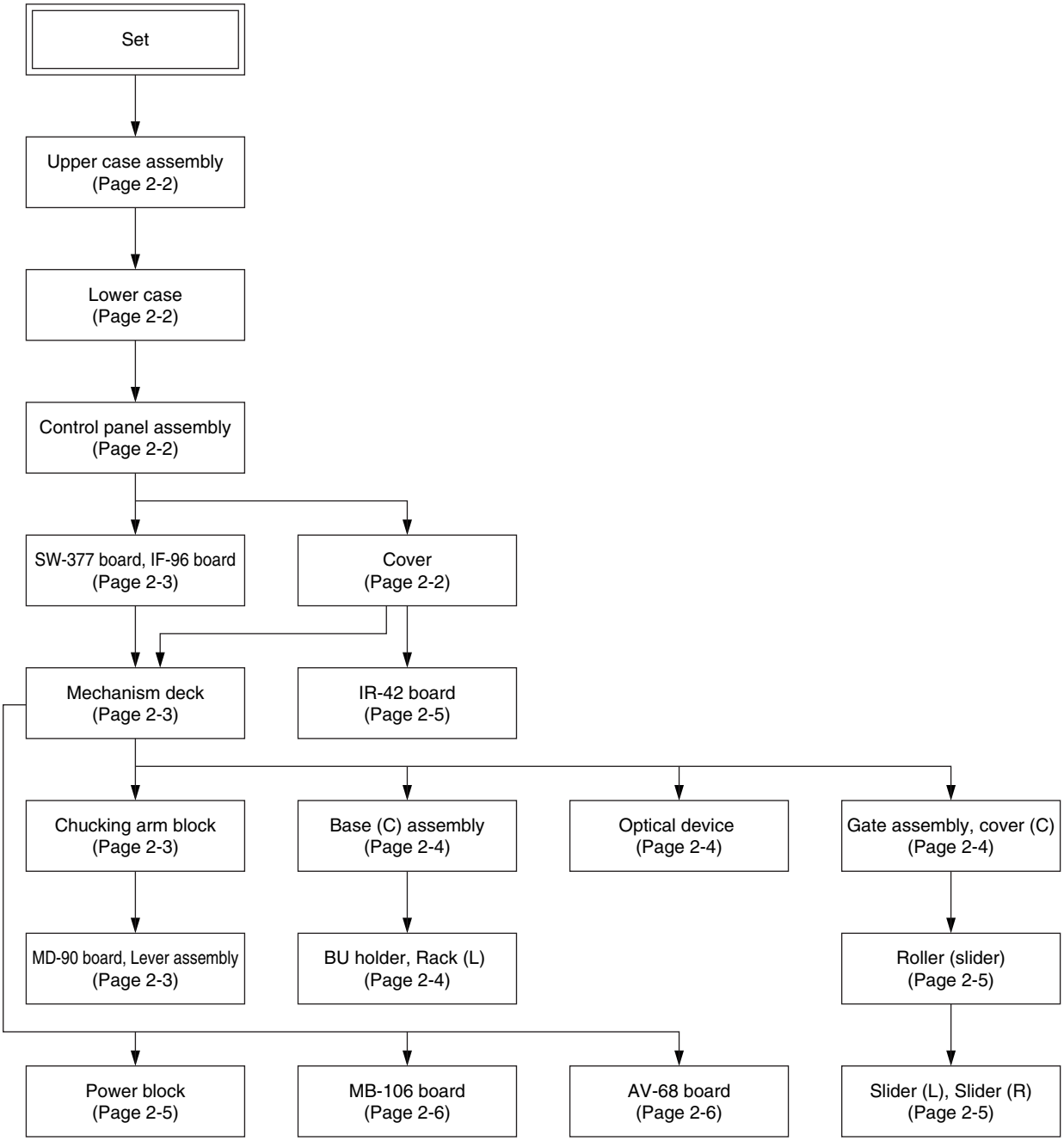
Language Code List

For details, see pages 48, 51, 63.
The language spellings conform to the ISO 639: 1988 (E/F) standard.

Code	Language	Code	Language	Code	Language	Code	Language
1027	Afar	1183	Irish	1347	Maori	1507	Samoan
1028	Abkhazian	1186	Scots Gaelic	1349	Macedonian	1508	Shona
1032	Afrikaans	1194	Galician	1350	Malayalam	1509	Somali
1039	Amharic	1196	Guarani	1352	Mongolian	1511	Albanian
1044	Arabic	1203	Gujarati	1353	Moldavian	1512	Serbian
1045	Assamese	1209	Hausa	1356	Marathi	1513	Siswati
1051	Aymara	1217	Hindi	1357	Malay	1514	Sesotho
1052	Azerbaijani	1226	Croatian	1358	Maltese	1515	Sundanese
1053	Bashkir	1229	Hungarian	1363	Burmese	1516	Swedish
1057	Byelorussian	1233	Armenian	1365	Nauru	1517	Swahili
1059	Bulgarian	1235	Interlingua	1369	Nepali	1521	Tamil
1060	Bihari	1239	Interlingue	1376	Dutch	1525	Telugu
1061	Bislama	1245	Inupiak	1379	Norwegian	1527	Tajik
1066	Bengali; Bangla	1248	Indonesian	1393	Occitan	1528	Thai
		1253	Icelandic	1403	(Afan)Oromo	1529	Tigrinya
1067	Tibetan	1254	Italian	1408	Oriya	1531	Turkmen
1070	Breton	1257	Hebrew	1417	Punjabi	1532	Tagalog
1079	Catalan	1261	Japanese	1428	Polish	1534	Setswana
1093	Corsican	1269	Yiddish	1435	Pashto; Pushto	1535	Tonga
1097	Czech	1283	Javanese			1538	Turkish
1103	Welsh	1287	Georgian	1436	Portuguese	1539	Tsonga
1105	Danish	1297	Kazakh	1463	Quechua	1540	Tatar
1109	German	1298	Greenlandic	1481	Rhaeto-Romance	1543	Twi
1130	Bhutani	1299	Cambodian			1557	Ukrainian
1142	Greek	1300	Kannada	1482	Kirundi	1564	Urdu
1144	English	1301	Korean	1483	Romanian	1572	Uzbek
1145	Esperanto	1305	Kashmiri	1489	Russian	1581	Vietnamese
1149	Spanish	1307	Kurdish	1491	Kinyarwanda	1587	Volapük
1150	Estonian	1311	Kirghiz	1495	Sanskrit	1613	Wolof
1151	Basque	1313	Latin	1498	Sindhi	1632	Xhosa
1157	Persian	1326	Lingala	1501	Sangho	1665	Yoruba
1165	Finnish	1327	Laothian	1502	Serbo-Croatian	1684	Chinese
1166	Fiji	1332	Lithuanian			1697	Zulu
1171	Faroese	1334	Latvian; Lettish	1503	Singhalese		
1174	French			1505	Slovak		
1181	Frisian	1345	Malagasy	1506	Slovenian	1703	Not specified

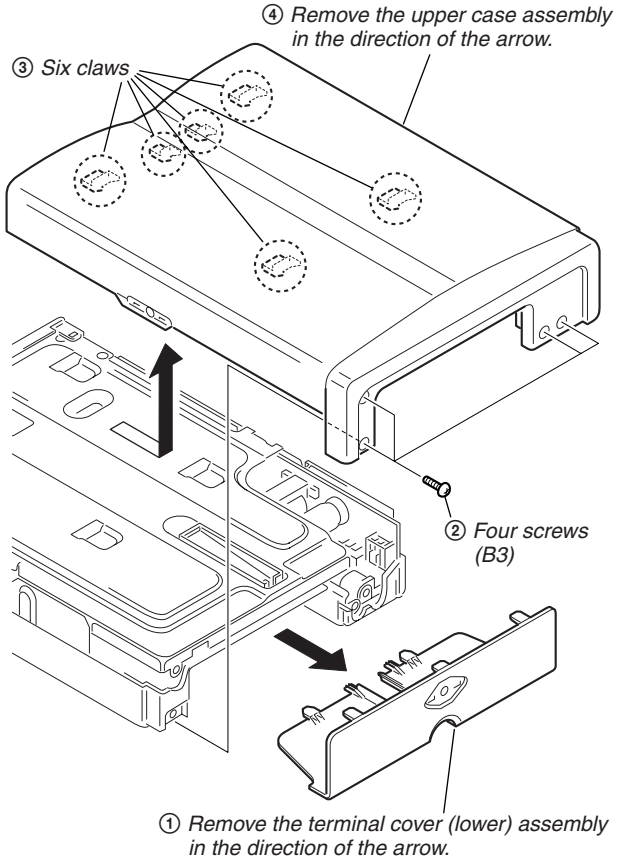
SECTION 2
DISASSEMBLY

The following flow chart shows the disassembly procedure.

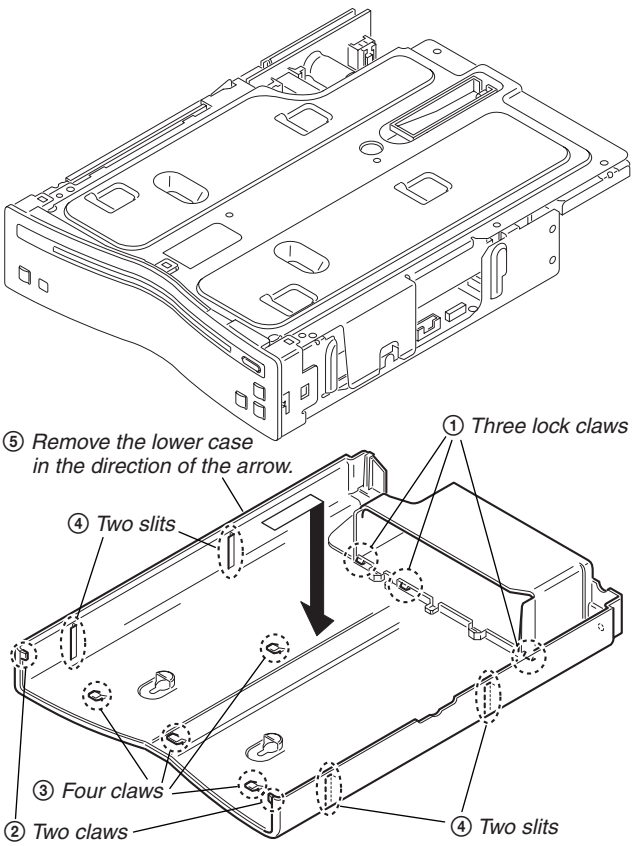

Set
Upper case assembly (Page 2-2)
Lower case (Page 2-2)
Control panel assembly (Page 2-2)
SW-377 board, IF-96 board (Page 2-3)
Cover (Page 2-2)
Mechanism deck (Page 2-3)
IR-42 board (Page 2-5)
Chucking arm block (Page 2-3)
Base (C) assembly (Page 2-4)
Optical device (Page 2-4)
Gate assembly, cover (C) (Page 2-4)
MD-90 board, Lever assembly (Page 2-3)
BU holder, Rack (L) (Page 2-4)
Roller (slider) (Page 2-5)
Power block (Page 2-5)
MB-106 board (Page 2-6)
AV-68 board (Page 2-6)
Slider (L), Slider (R) (Page 2-5)

NOTE: Follow the disassembly procedure in the numerical order given.

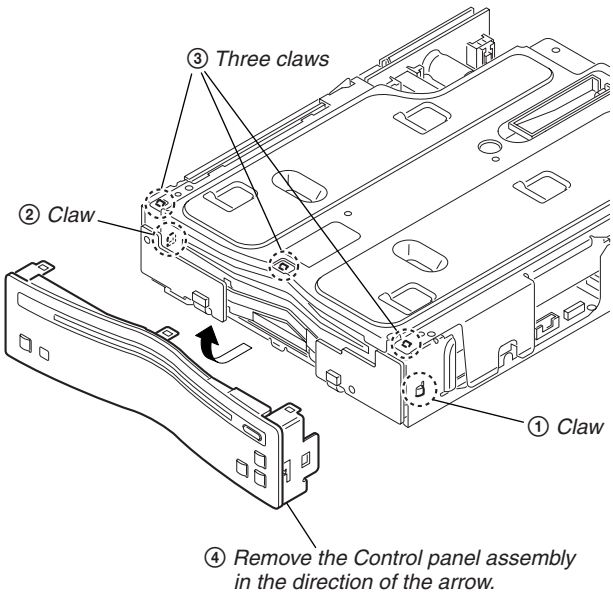
2-1. UPPER CASE ASSEMBLY


④ Remove the upper case assembly in the direction of the arrow.
③ Six claws
② Four screws (B3)
① Remove the terminal cover (lower) assembly in the direction of the arrow.

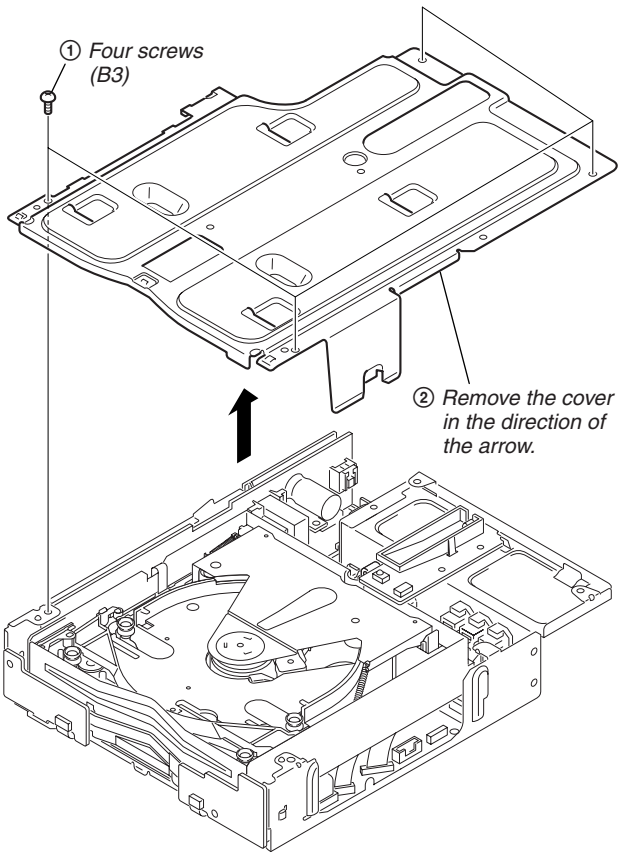
2-2. LOWER CASE



2-3. CONTROL PANEL ASSEMBLY

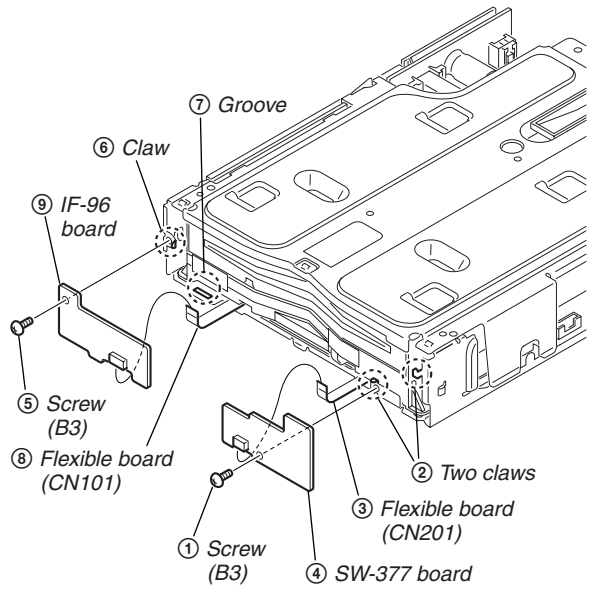


2-4. COVER

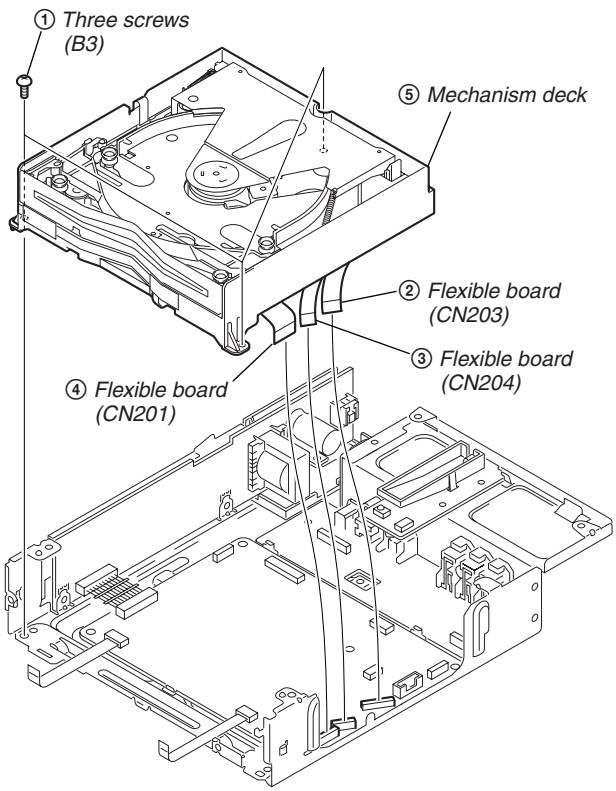


http://getMANUAL.com

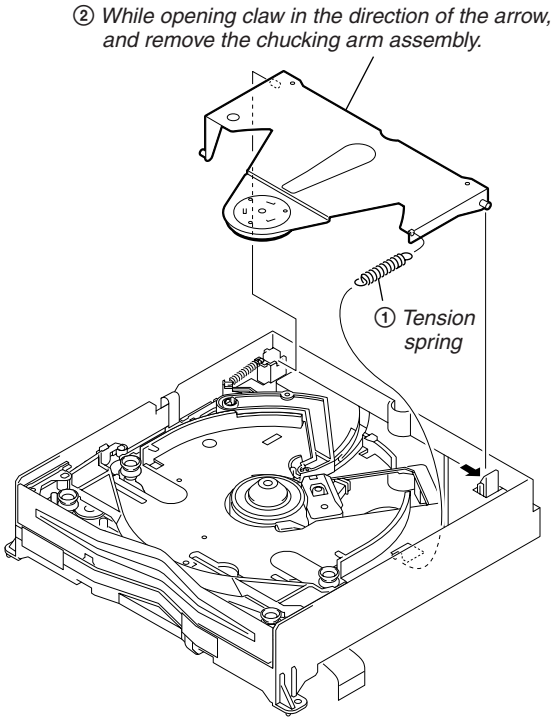
2-5. SW-377 BOARD, IF-96 BOARD



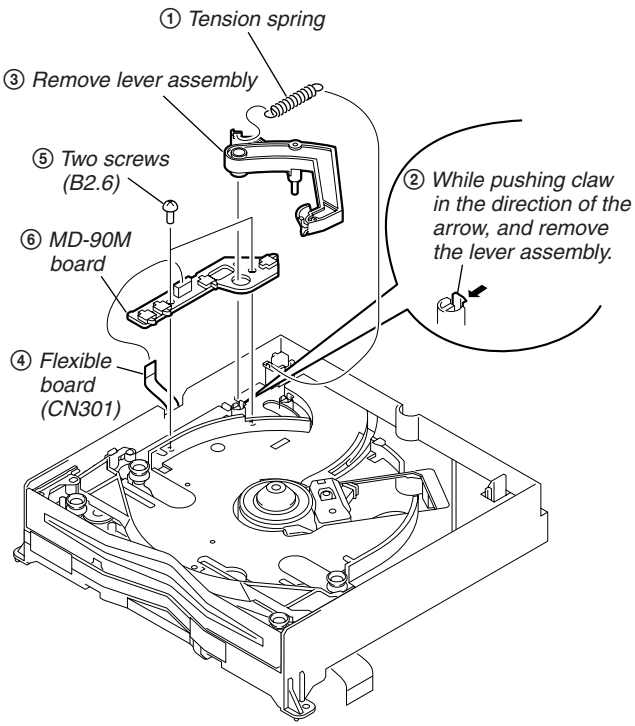
2-6. MECHANISM DECK



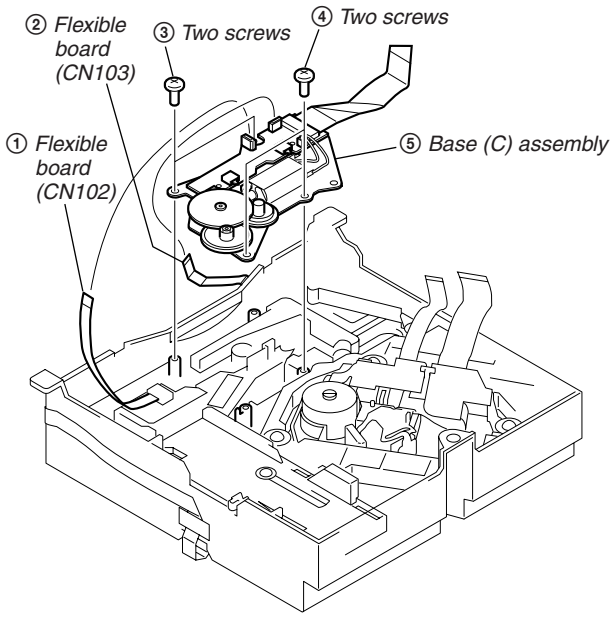
2-7. CHUCKING ARM BLOCK



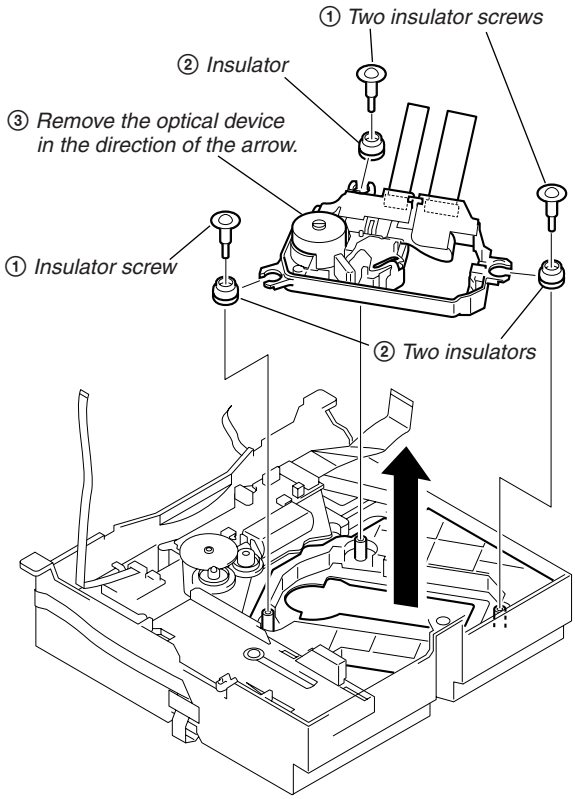
2-8. MD-90 BOARD, LEVER ASSEMBLY


① Tension spring
③ Remove lever assembly
⑤ Two screws (B2.6)
⑥ MD-90M board
④ Flexible board (CN301)
② While pushing claw in the direction of the arrow, and remove the lever assembly.

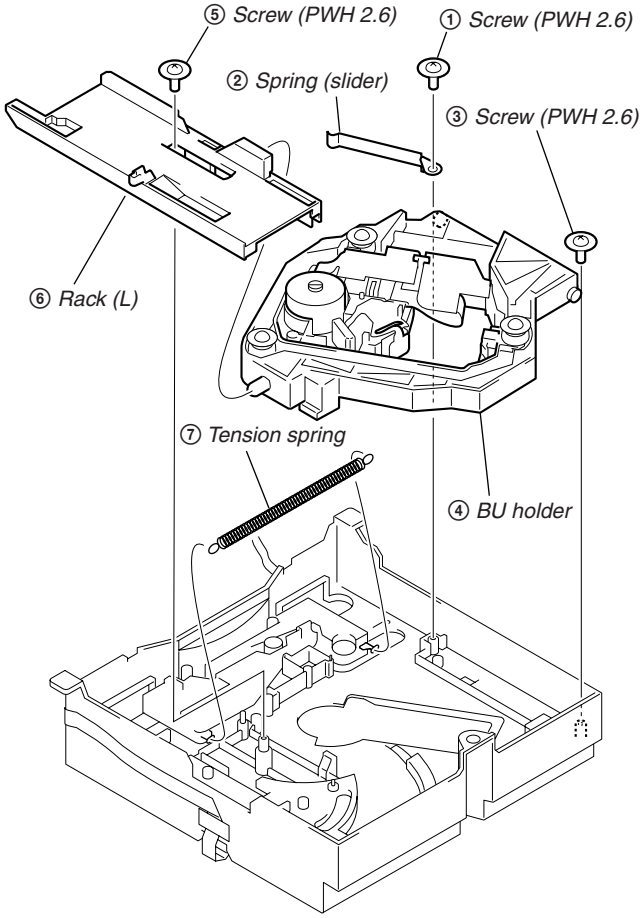
2-9. BASE (C) ASSEMBLY



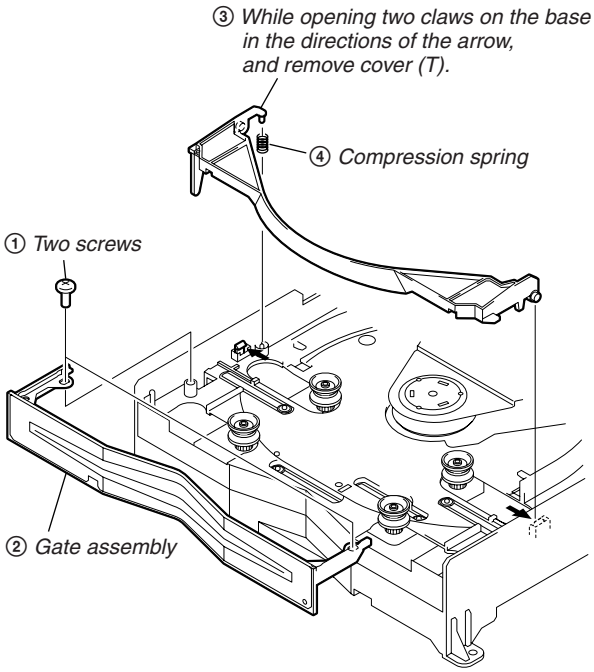
2-10. OPTICAL DEVICE


① Two insulator screws
② Insulator
③ Remove the optical device in the direction of the arrow.
① Insulator screw
② Two insulators

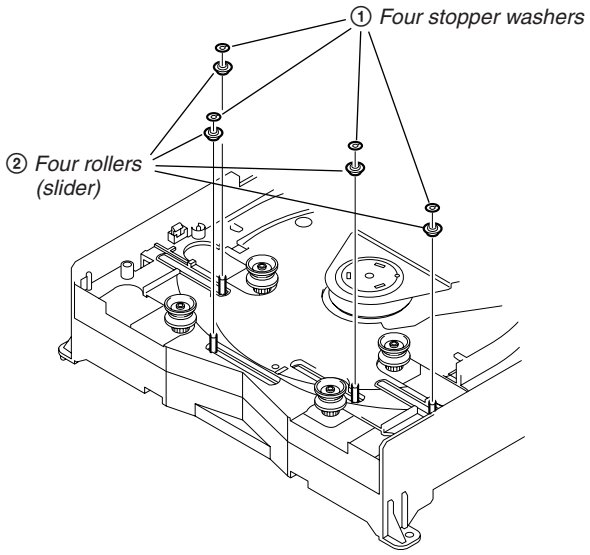
2-11. BU HOLDER, RACK (L)



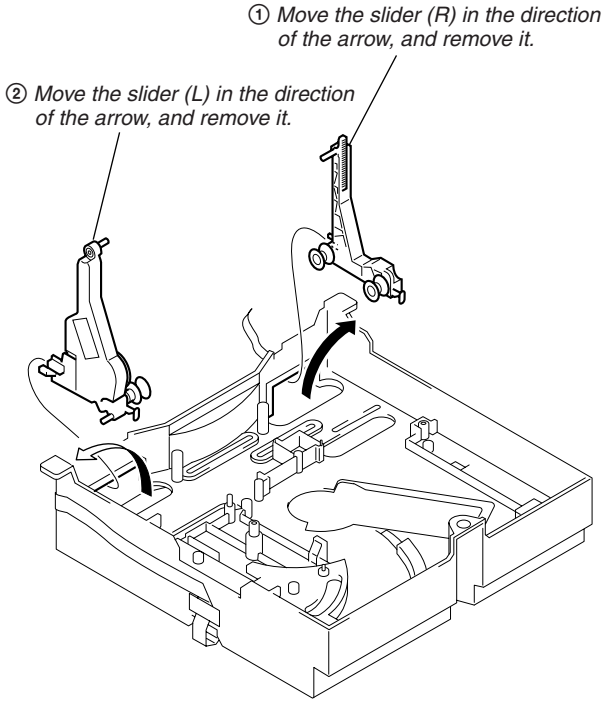
2-12. GATE ASSEMBLY, COVER (C)


③ While opening two claws on the base in the directions of the arrow, and remove cover (T).
④ Compression spring
① Two screws
② Gate assembly

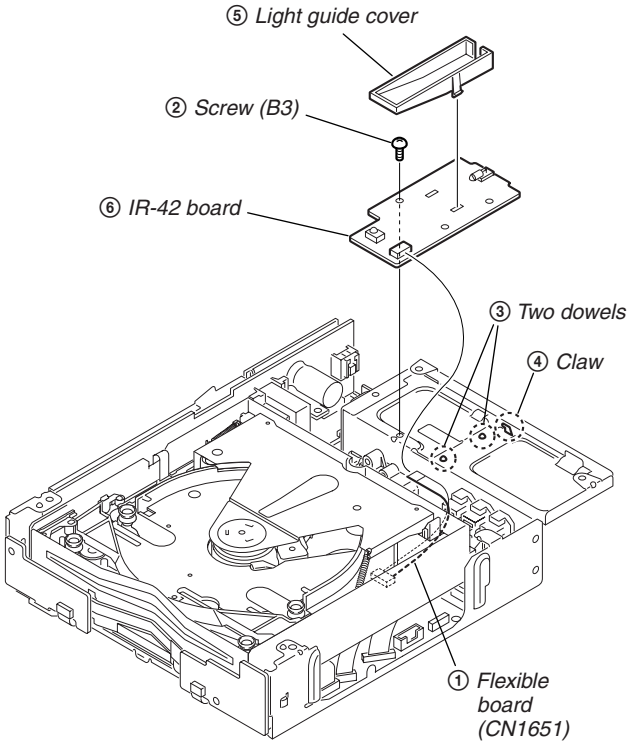
2-13. ROLLER (SLIDER)



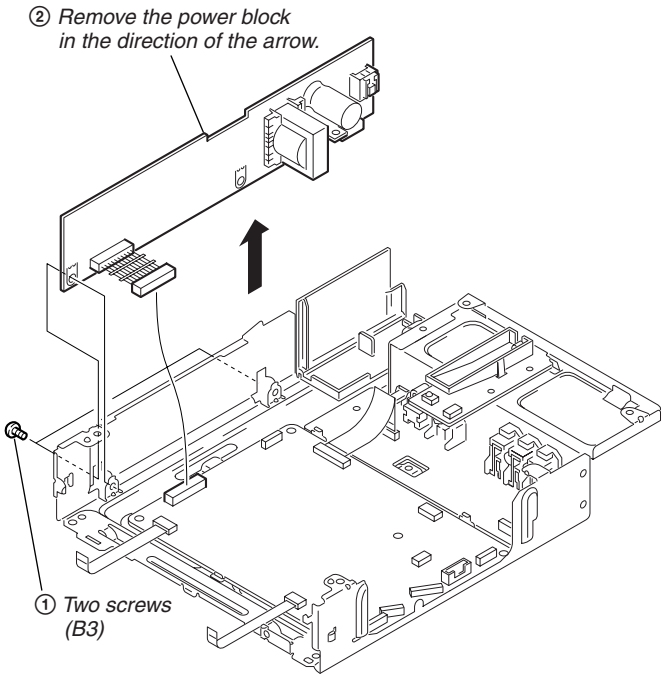
2-14. SLIDER (L), SLIDER (R)


① Move the slider (R) in the direction of the arrow, and remove it.
② Move the slider (L) in the direction of the arrow, and remove it.

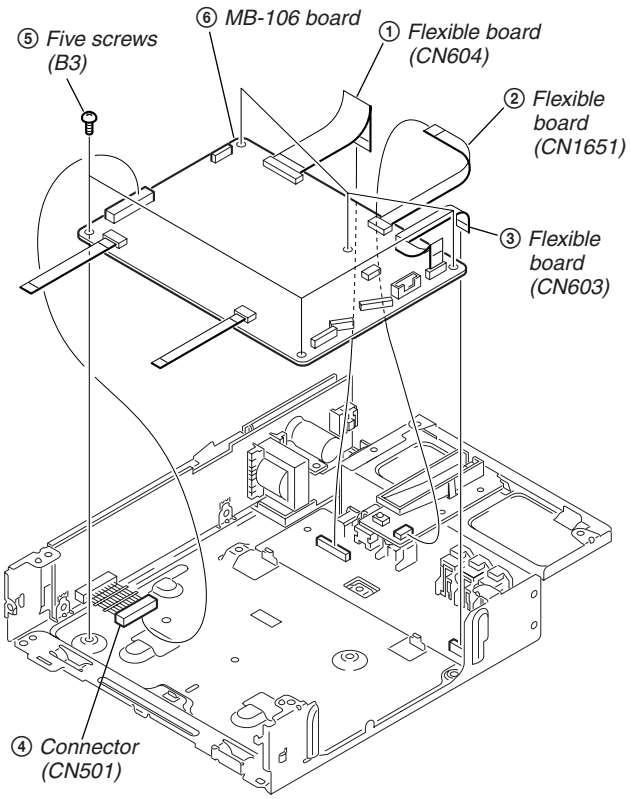
2-15. IR-42 BOARD



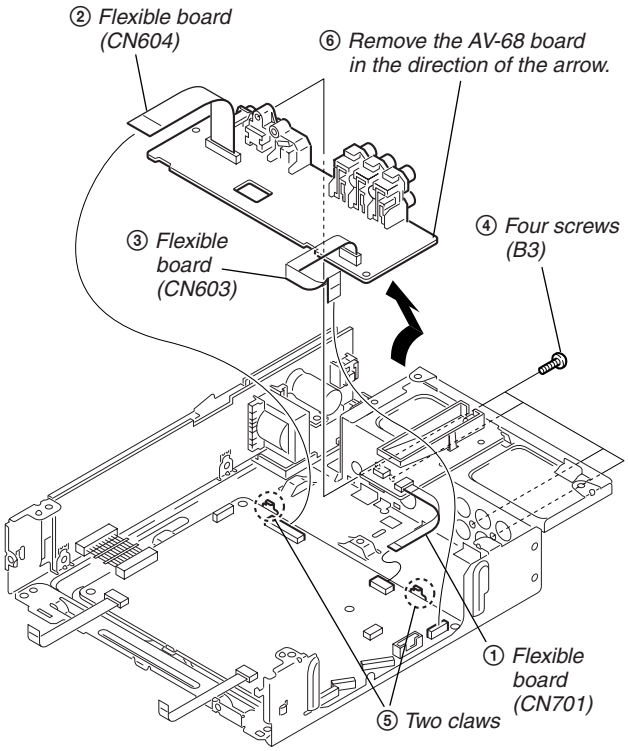
2-16. POWER BLOCK



2-17. MB-106 BOARD

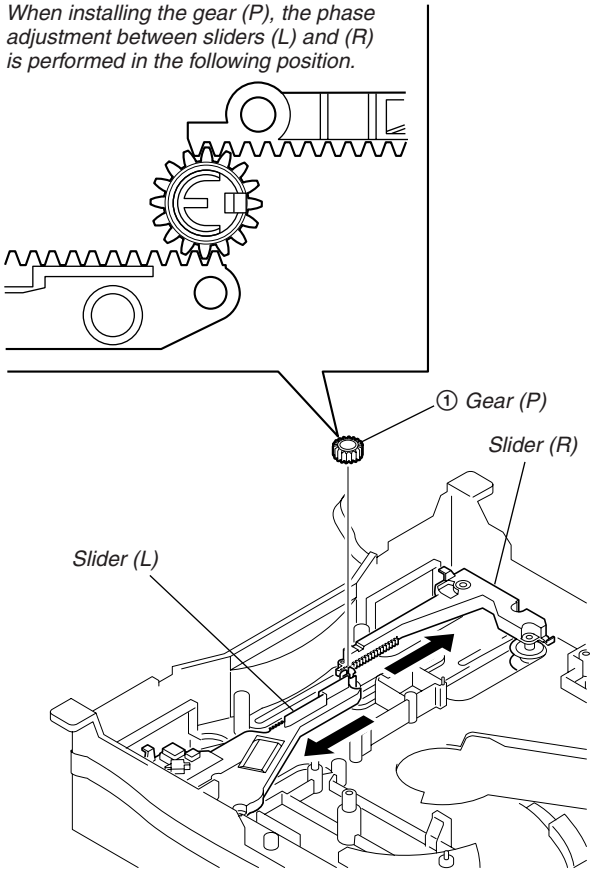


2-18. AV-68 BOARD

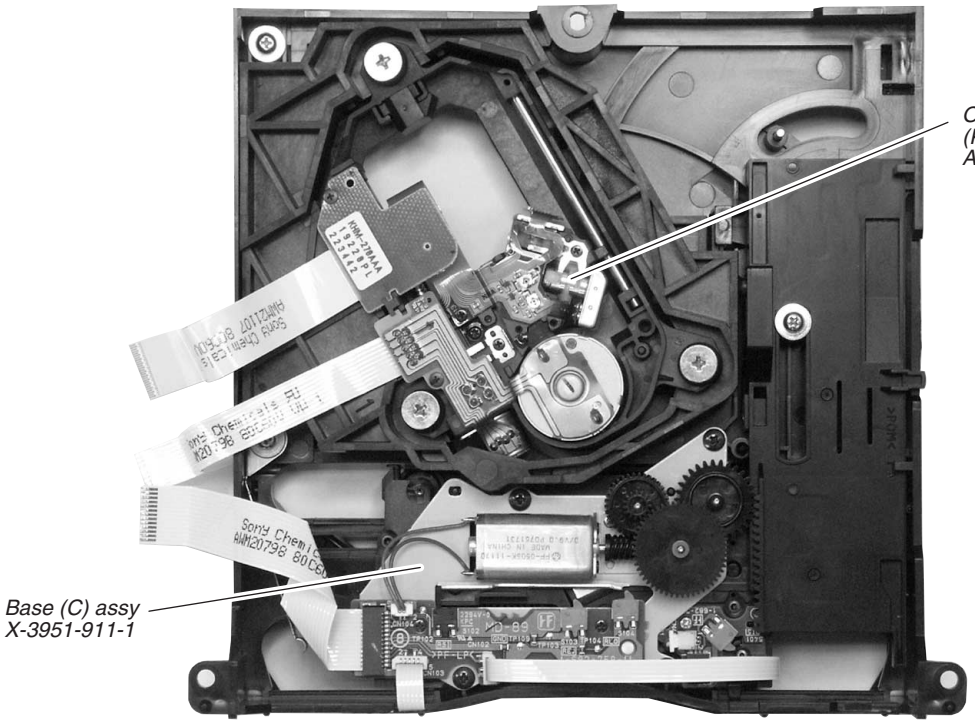

② Flexible board (CN604)
⑥ Remove the AV-68 board in the direction of the arrow.
③ Flexible board (CN603)
④ Four screws (B3)
① Flexible board (CN701)
⑤ Two claws

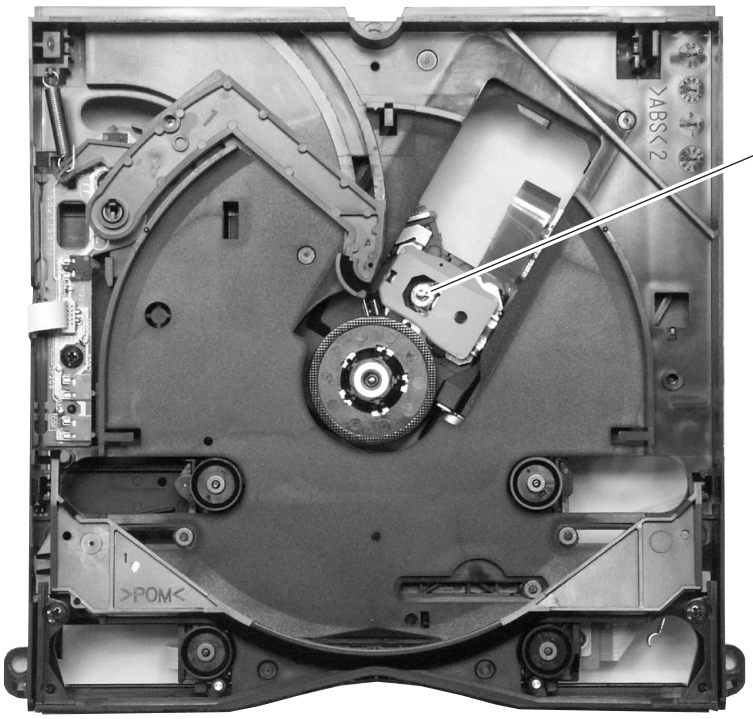
2-19. SLIDERS (L) AND (R) PHASE ADJUSTMENT

When installing the gear (P), the phase adjustment between sliders (L) and (R) is performed in the following position.

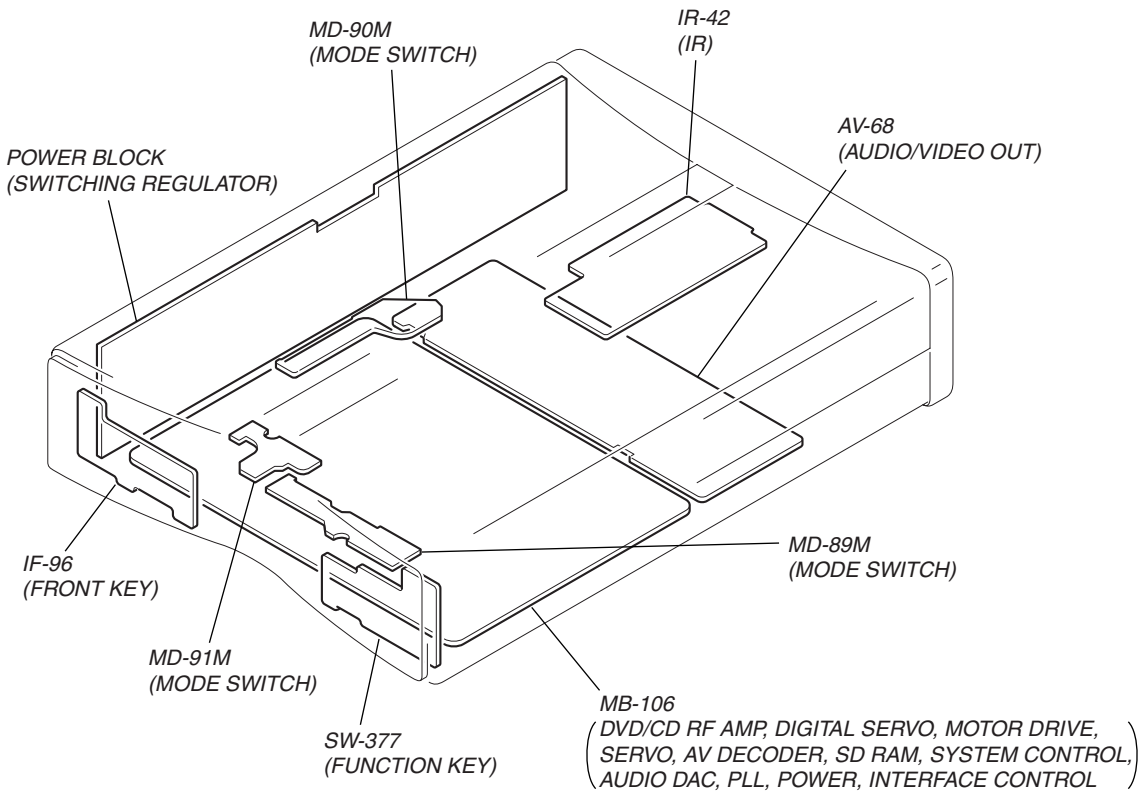


2-20. INTERNAL VIEWS



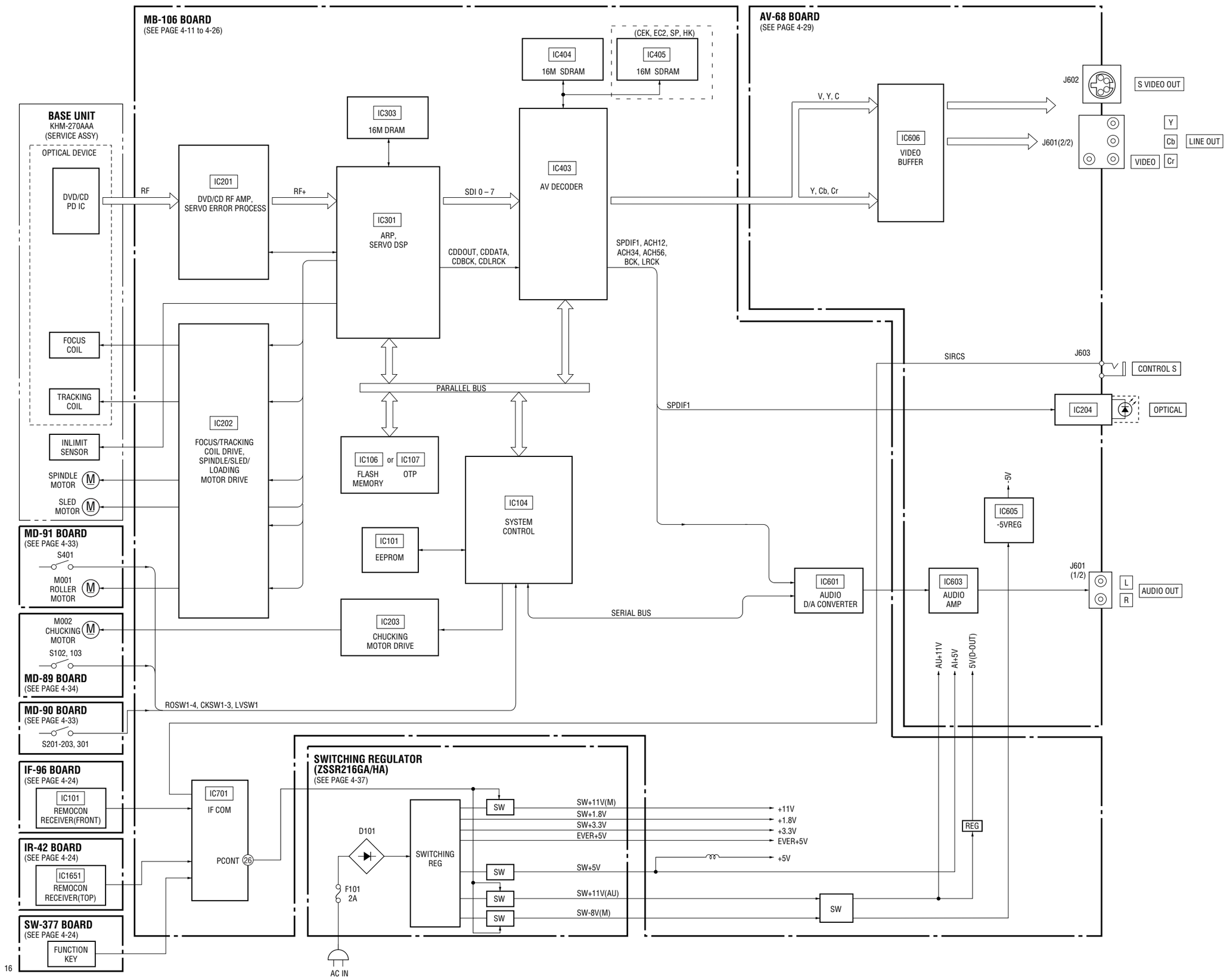


2-21. CIRCUIT BOARDS LOCATION

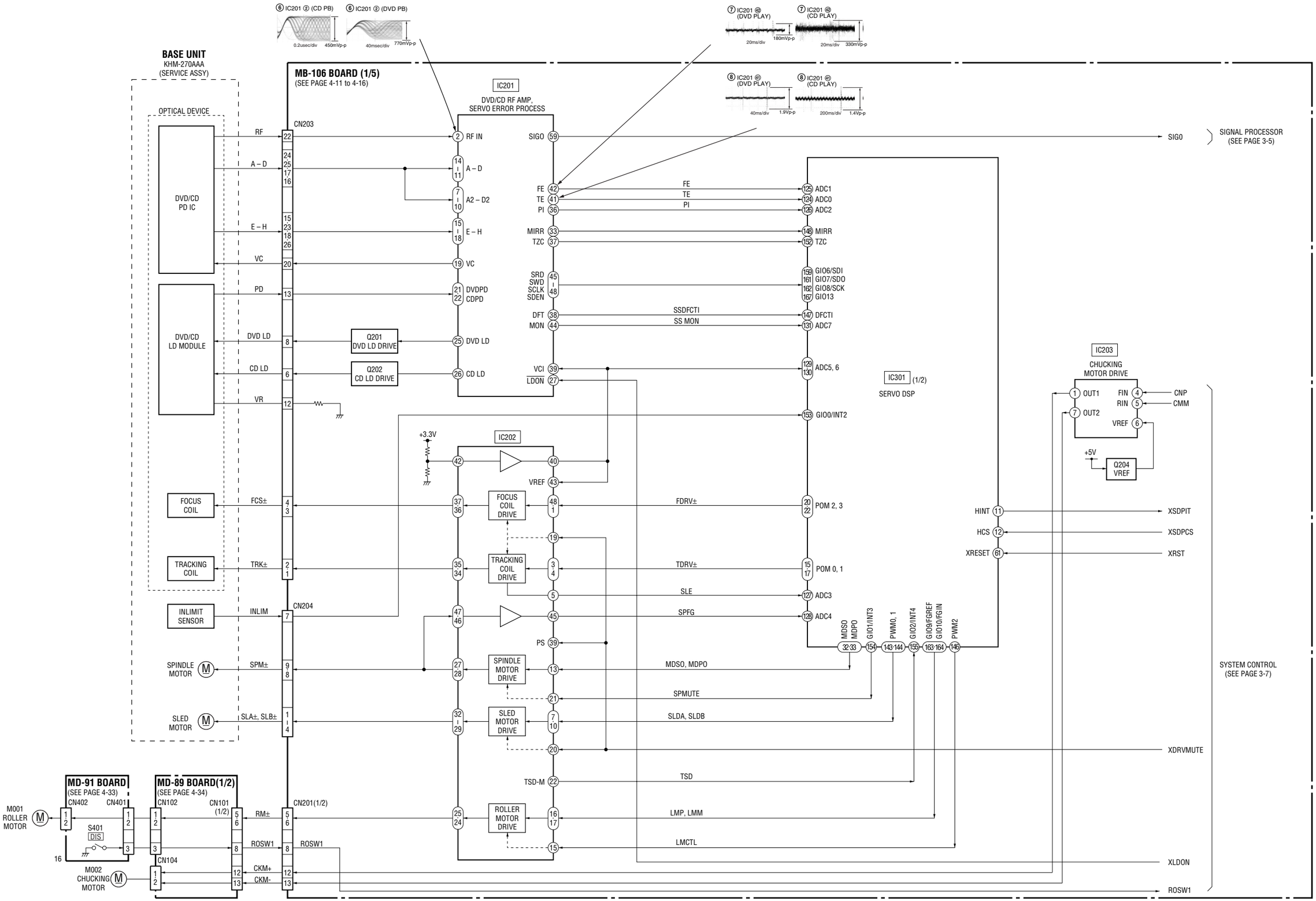


SECTION 3
BLOCK DIAGRAMS

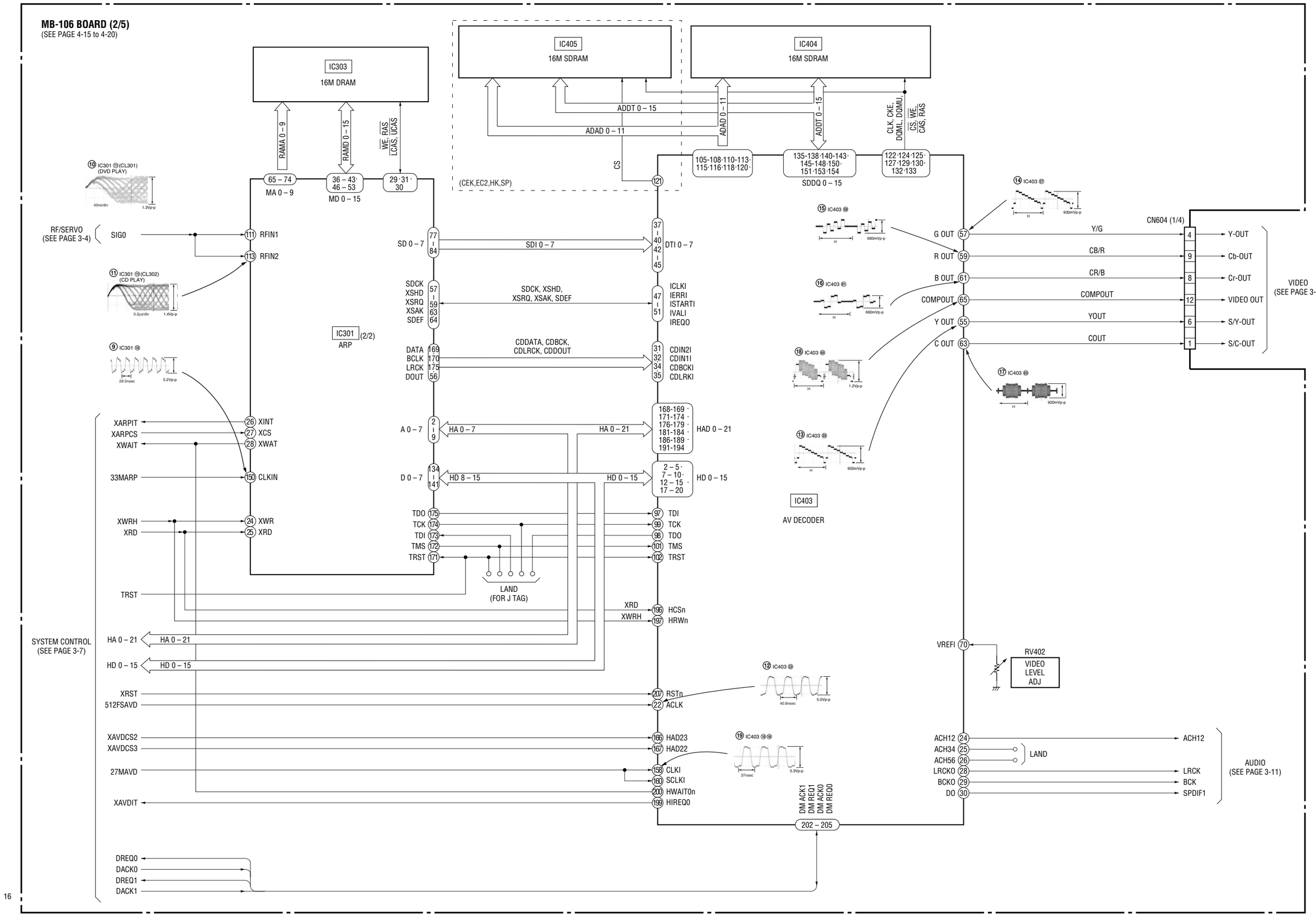
3-1. OVERALL BLOCK DIAGRAM



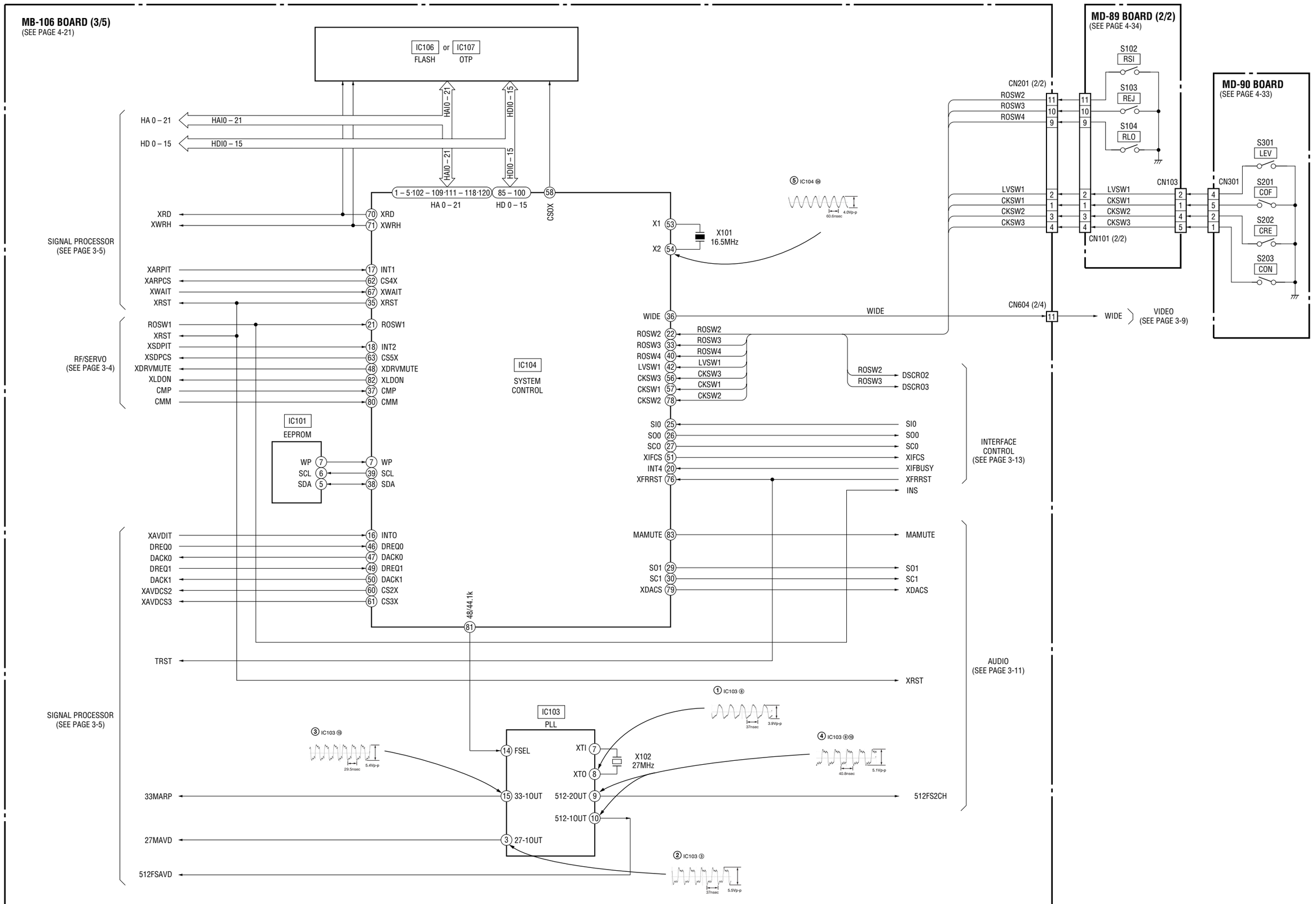
3-2. RF/SERVO BLOCK DIAGRAM



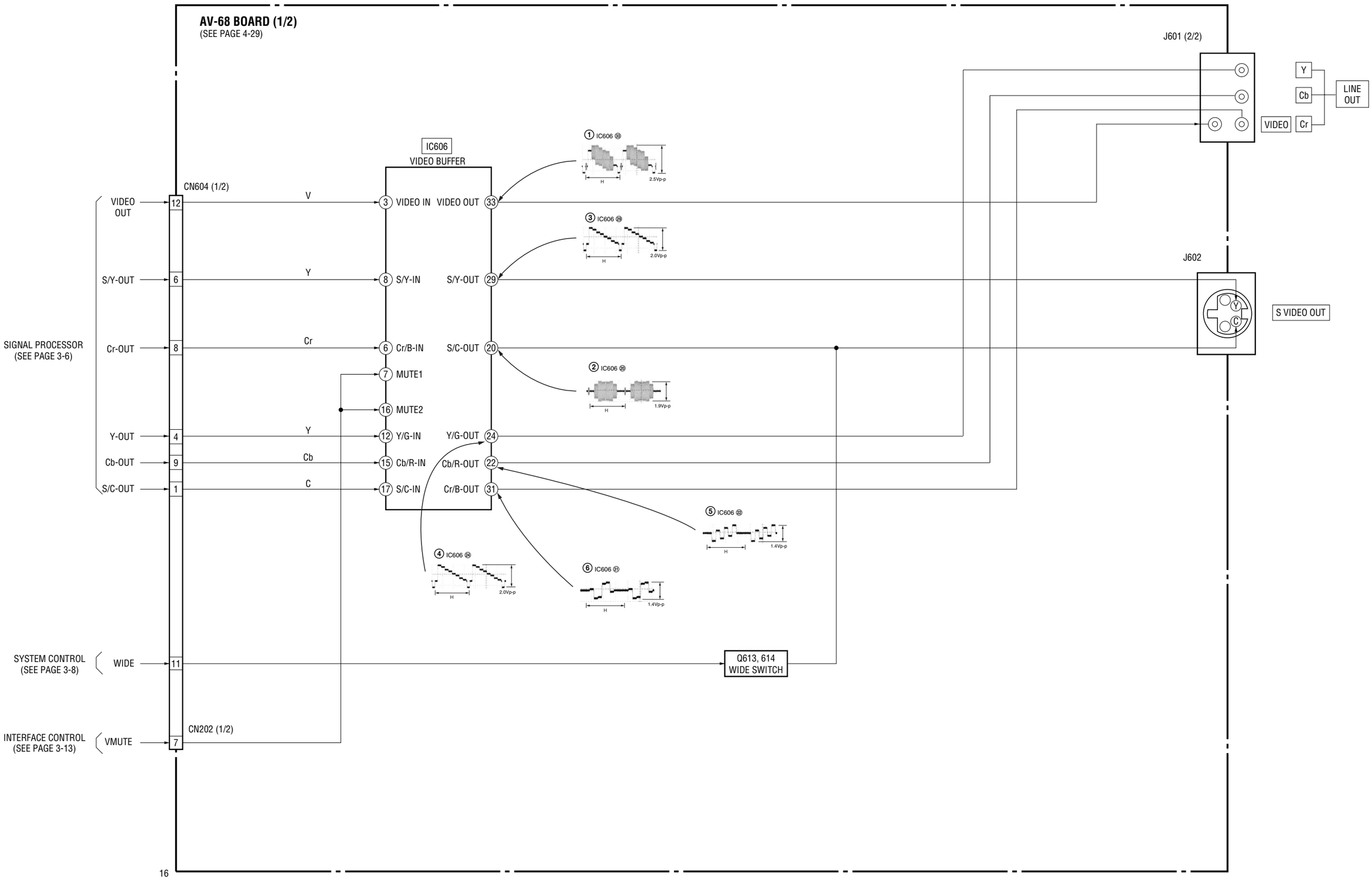
3-3. SIGNAL PROCESSOR BLOCK DIAGRAM



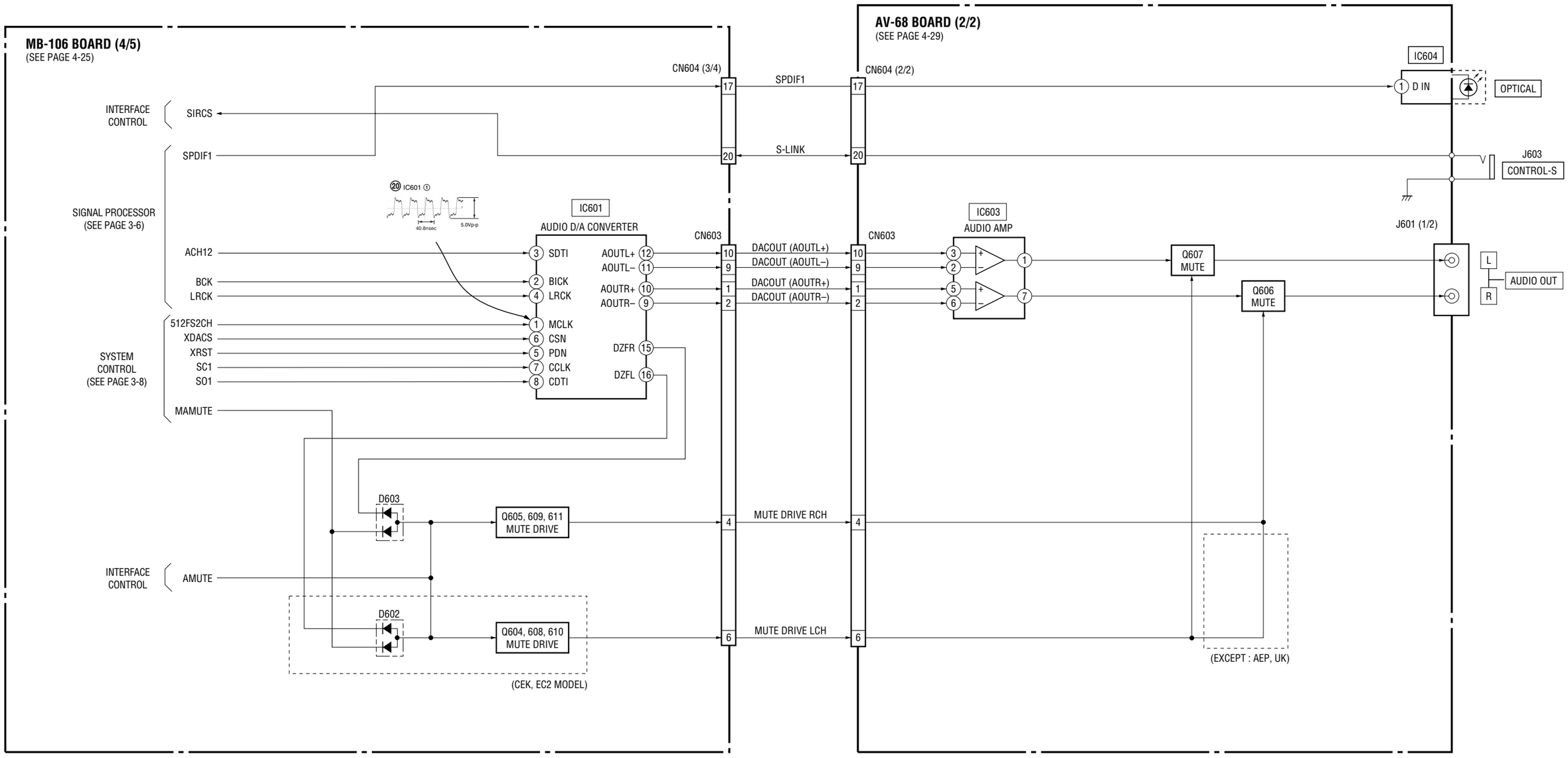
3-4. SYSTEM CONTROL BLOCK DIAGRAM



3-5. VIDEO BLOCK DIAGRAM

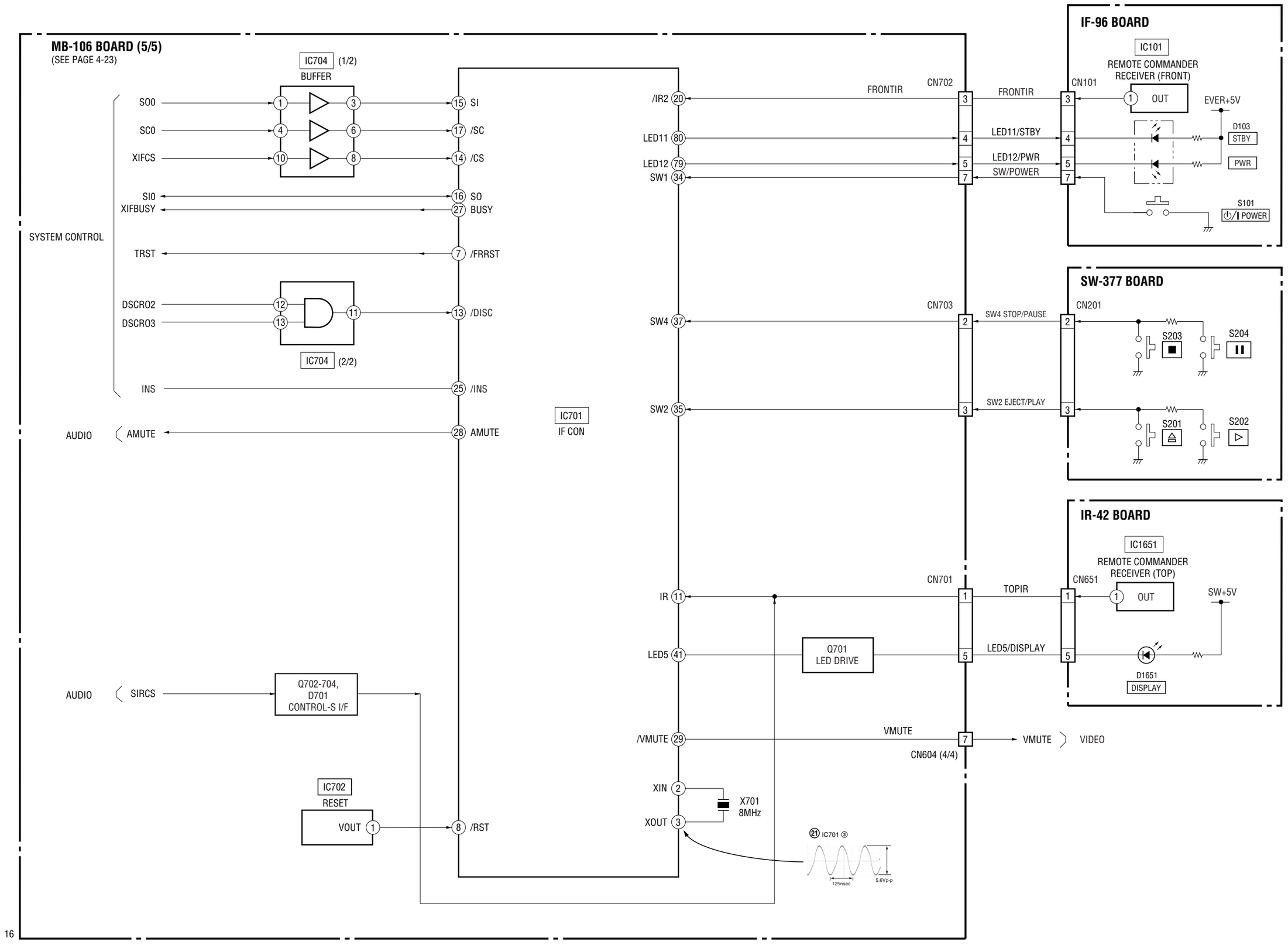


3-6. AUDIO BLOCK DIAGRAM

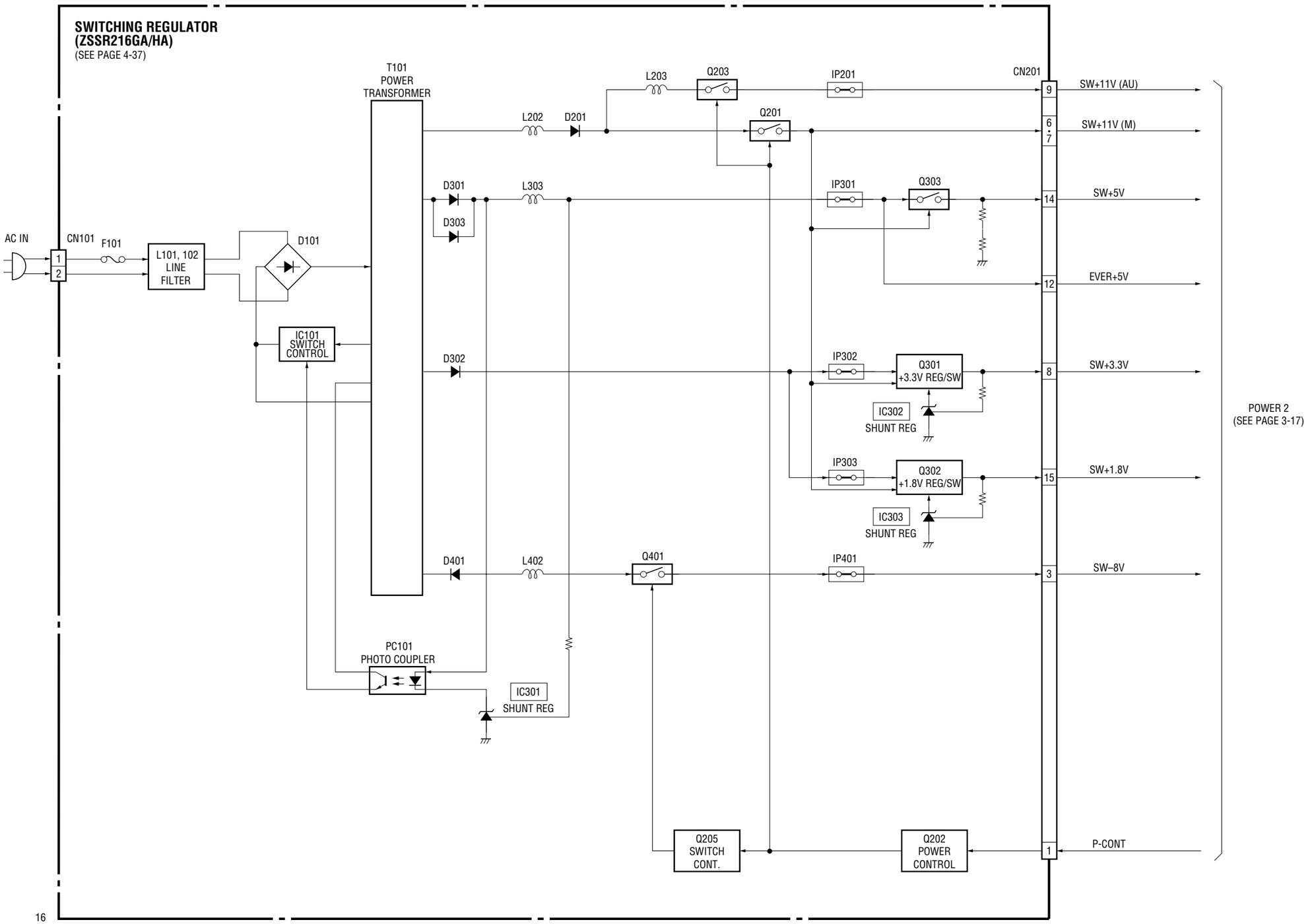


16

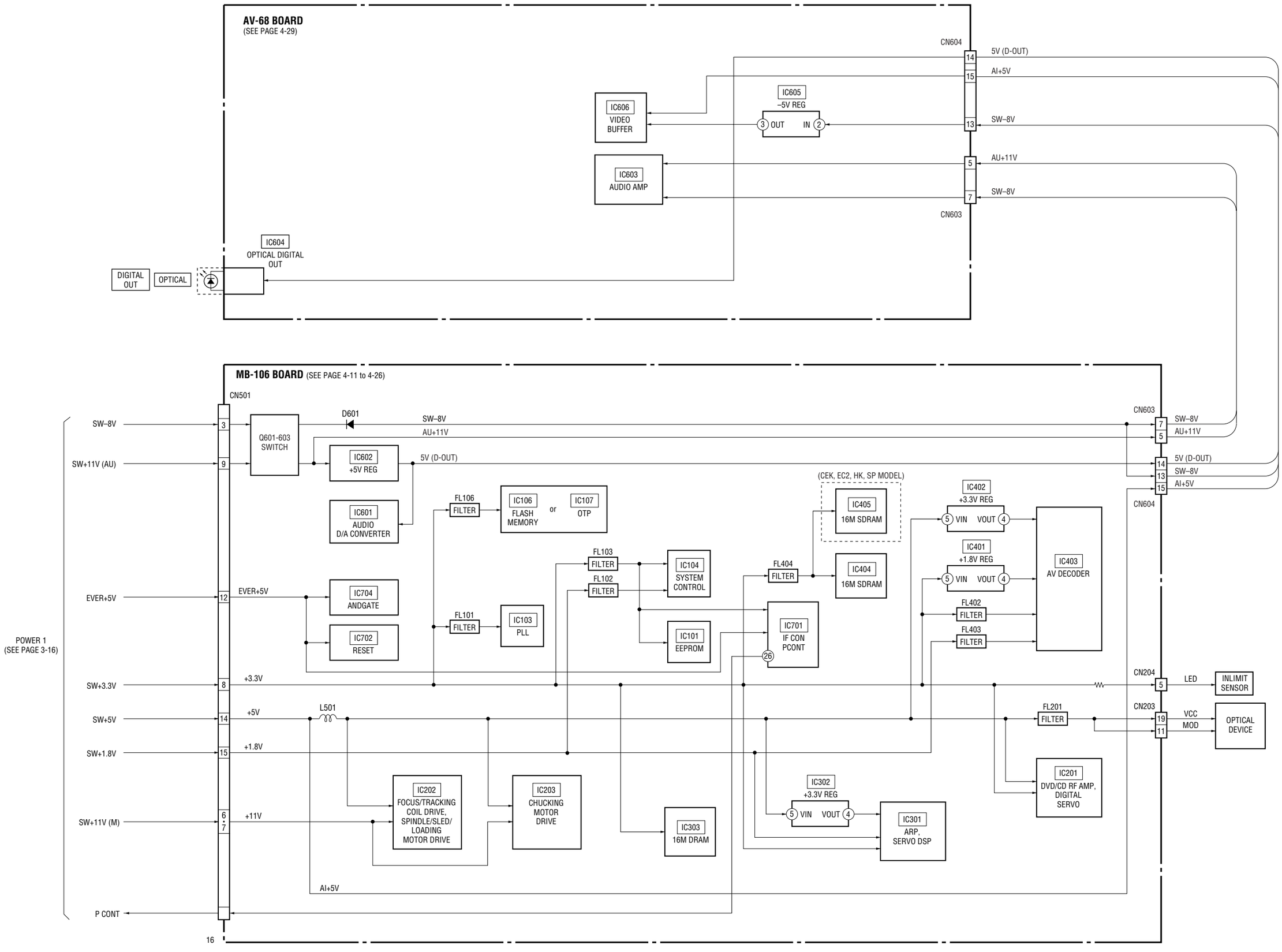
3-7. INTERFACE CONTROL BLOCK DIAGRAM



3-8. POWER BLOCK DIAGRAM (1/2)

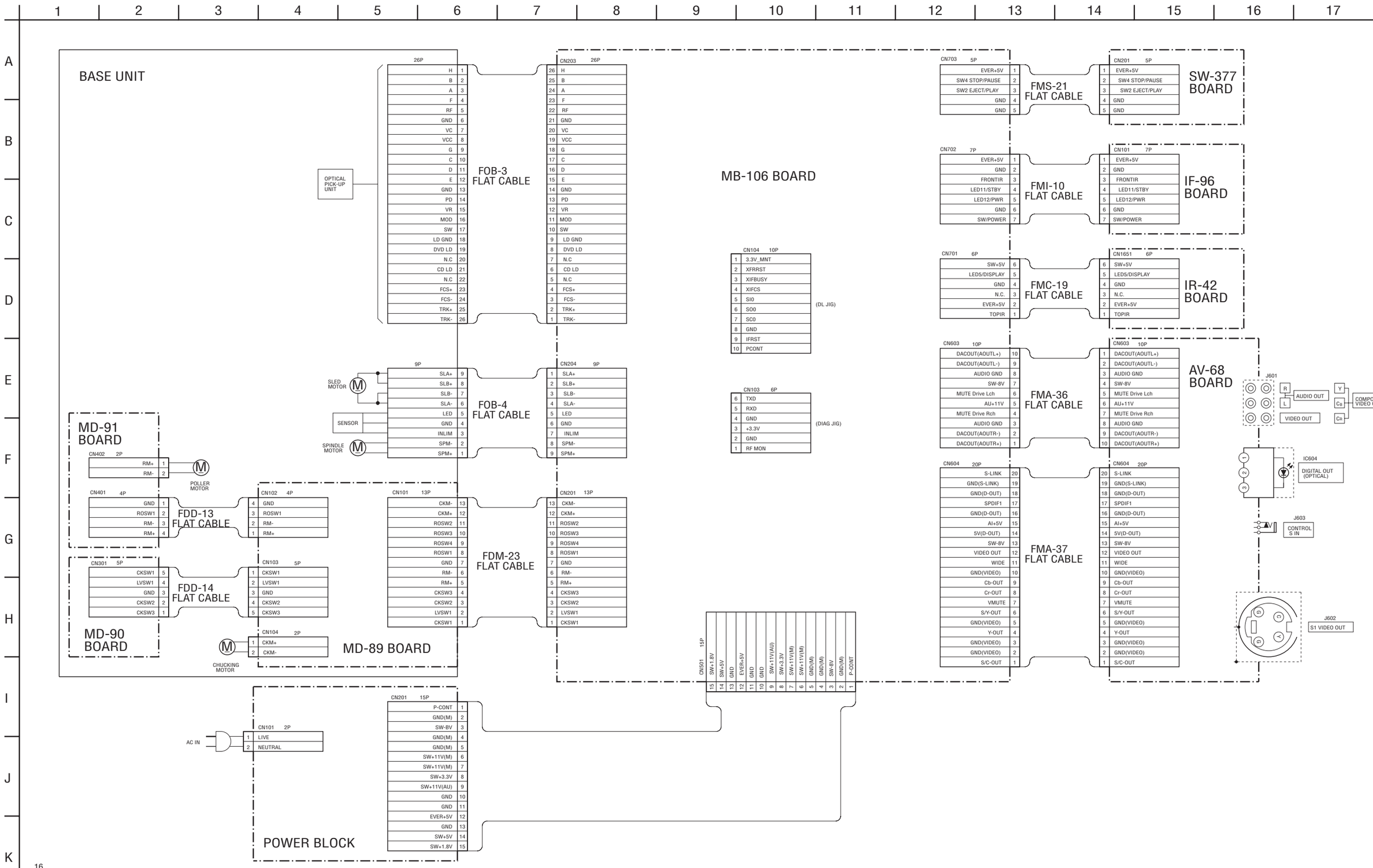


3-9. POWER BLOCK DIAGRAM (2/2)



SECTION 4
PRINTED WIRING BOARDS AND SCHEMATIC DIAGRAMS

4-1. FRAME SCHEMATIC DIAGRAM



4-2. PRINTED WIRING BOARDS AND SCHEMATIC DIAGRAMS

THIS NOTE IS COMMON FOR WIRING BOARDS AND SCHEMATIC DIAGRAMS
(In addition to this, the necessary note is printed in each block)

(For printed wiring boards)
- ○——— : indicates a lead wire mounted on the component side.
- ●——— : indicates a lead wire mounted on the printed side.
- ○ : Through hole.
- ▒▒▒ : Pattern from the side which enables seeing.
  (The other layers' patterns are not indicated.)

Caution:	
Pattern face side: (Side B)	Parts on the pattern face side seen from the pattern face are indicated.
Parts face side: (Side A)	Parts on the parts face side seen from the parts face are indicated.

- Abbreviation
  CND : Canadian model
  AUS : Australian model
  NZ : New Zealand model
  HK : Hong Kong model
  MX : Mexico model
  SP : Singapore model
  : Malaysia model
  : Thailand model
  : Philippines model
  : Indonesia model
  : Vietnum model
  AR : Argentina model
  : Chilean model
  : Peruvian model

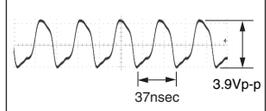
(For schematic diagrams)
- All capacitors are in μF unless otherwise noted. pF : μμF. 50V or less are not indicated except for electrolytics and tantalums.
- All resistors are in ohms, 1/4 W (Chip resistors : 1 /10 W) un-less otherwise specified.
  kΩ=1000Ω, MΩ=1000kΩ.
- Caution when replacing chip parts.
  New parts must be attached after removal of chip.
  Be careful not to heat the minus side of tantalum capacitor, be-cause it is damaged by the heat.
- All variable and adjustable resistors have characteristic curve B, unless otherwise noted.
- : non flammable resistor
- : fusible resistor
- : panel designation
- △ : internal component.
- : adjustment for repair.
- B + : B+ Line
- B − : B– Line
- Circled numbers refer to waveforms.
- Voltages are dc between measurement point.
- Readings are taken with a color-bar signals on DVD refer-ence disc and when playing CD reference disc.
- Readings are taken with a digital multimeter (DC 10MW).
- Voltage variations may be noted due to normal production toler-ances.

Note :	**Note :**
The components identified by mark ⚠ or dotted line with mark ⚠ are critical for safety. Replace only with part number specified.	Les composants identifiés par une marque ⚠ sont critiques pour la sécurité. Ne les remplacer que par une pièce portant le numéro spécifié.

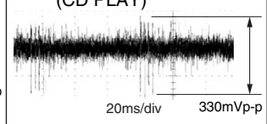
When indicating parts by reference number, please include the board name.

MB-106 BOARD

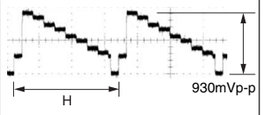
① IC103 ⑧



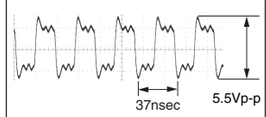
⑦ IC201 ㊷ (CD PLAY)



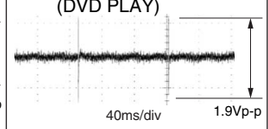
⑭ IC403 ㊼



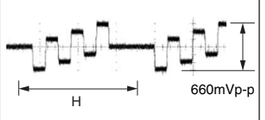
② IC103 ③



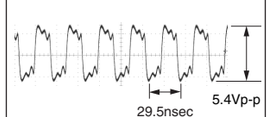
⑧ IC201 ㊶ (DVD PLAY)



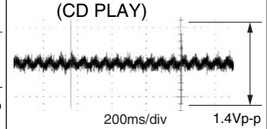
⑮ IC403 ㊾



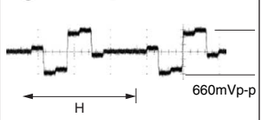
③ IC103 ⑮



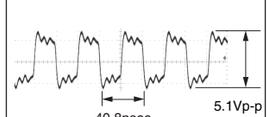
⑧ IC201 ㊶ (CD PLAY)



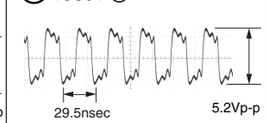
⑯ IC403 ㊶



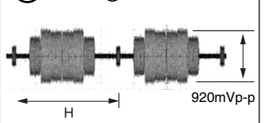
④ IC103 ⑨⑩



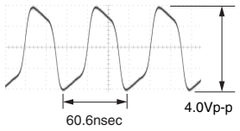
⑨ IC301 ㊿



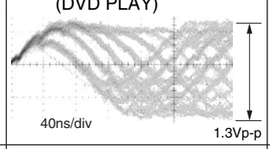
⑰ IC403 ㊸



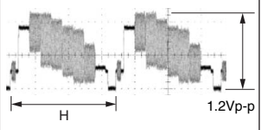
⑤ IC104 ㊹



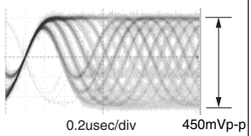
⑩ IC301 ㊶(CL301) (DVD PLAY)



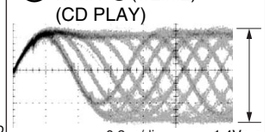
⑱ IC403 ㊺



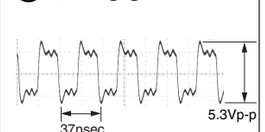
⑥ IC201 ② (CD PLAY)



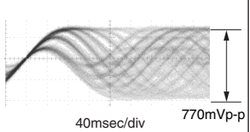
⑪ IC301 ㊸(CL302) (CD PLAY)



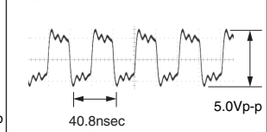
⑲ IC403 ㊽㊾



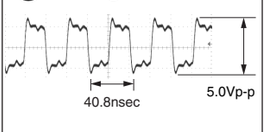
⑥ IC201 ② (DVD PLAY)



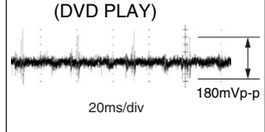
⑫ IC403 ㉒



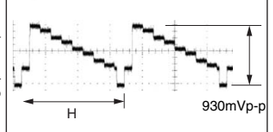
⑳ IC601 ①



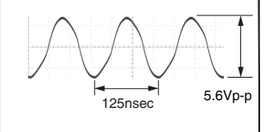
⑦ IC201 ㊷ (DVD PLAY)



⑬ IC403 ㊺

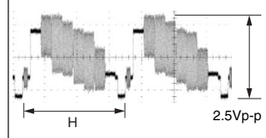


㉑ IC701 ③

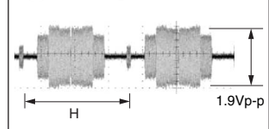


AV-68 BOARD

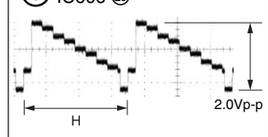
① IC606 ㉝



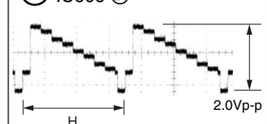
② IC606 ⑳



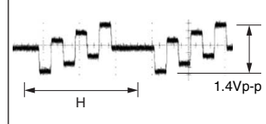
③ IC606 ㉙



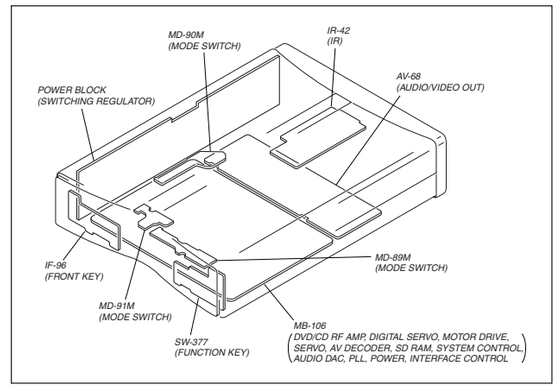
④ IC606 ㉔



⑤ IC606 ㉒



⑥ IC606 ㉛



MB-106 (DVD/CD, RF AMP, DIGITAL SERVO, MOTOR DRIVE, SERVO, AV DECODER, SD RAM, SYSTEM CONTROL, AUDIO ADC, PLL, POWER, INTERFACE CONTROL) PRINTED WIRING BOARD

• : Uses unleaded solder.

For printed wiring board

There are a few cases that the part printed on this diagram isn't mounted in this model.

• Refer to page 4-6 for circuit boards location.

MB-106 BOARD (SIDE A)

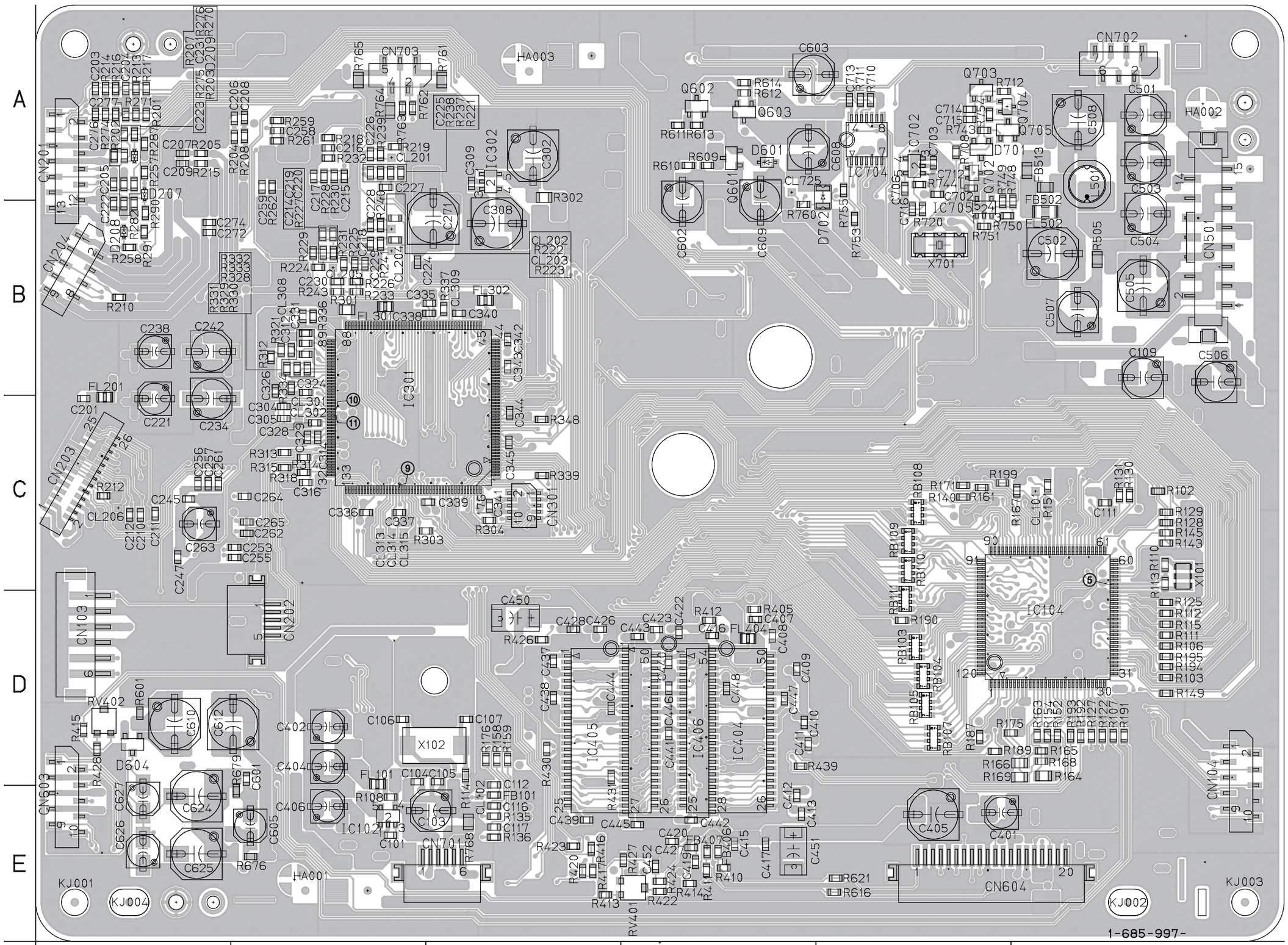
CN103 D-1
CN104 D-6
CN201 A-1
CN203 C-1
CN204 B-1
CN501 B-6
CN603 E-1
CN604 E-5
CN701 E-3
CN702 A-6
CN703 A-2

D207 A-1
D208 B-1
D209 A-1
D601 A-4
D604 D-1
D701 A-5

IC104 D-6
IC301 C-2
IC302 A-3
IC403 D-4
IC404 D-4
IC405 D-3
IC702 A-5
IC704 A-5

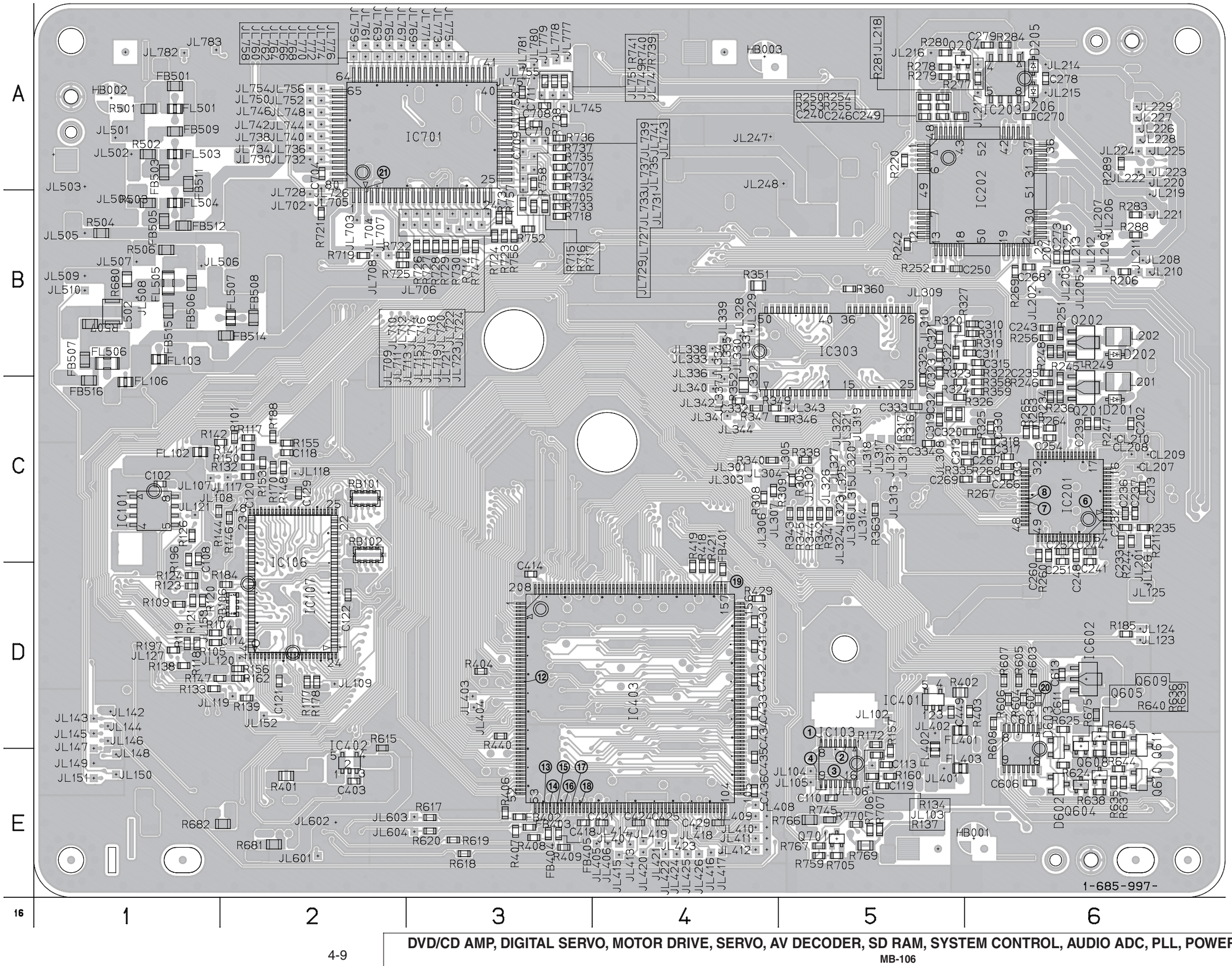
Q601 A-4
Q602 A-4
Q603 A-4
Q704 A-5

RV402 D-1



• : Uses unleaded solder. • Refer to page 4-6 for circuit boards location.

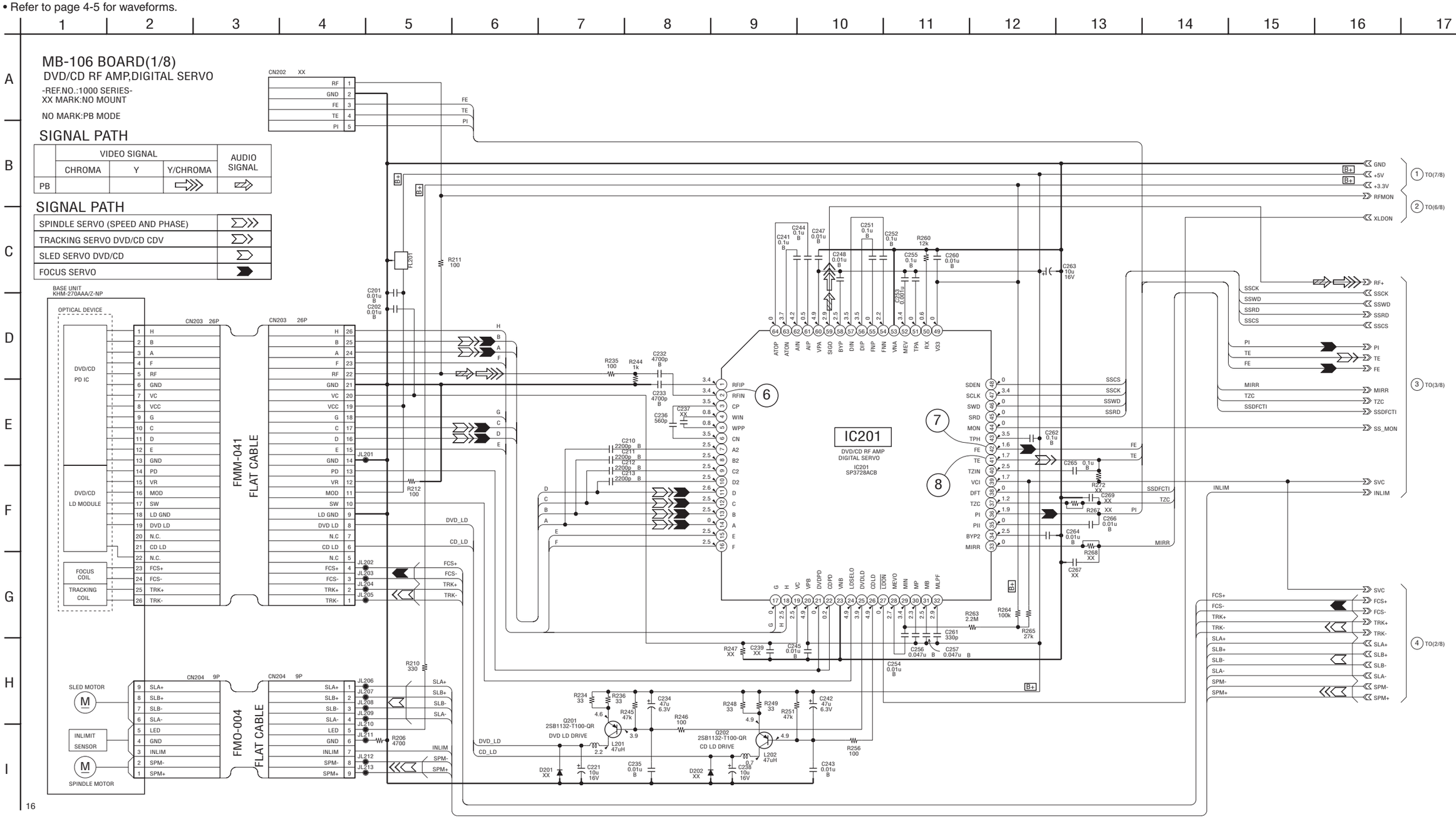
MB-106 BOARD(SIDE B)



MB-106 BOARD (SIDE B)

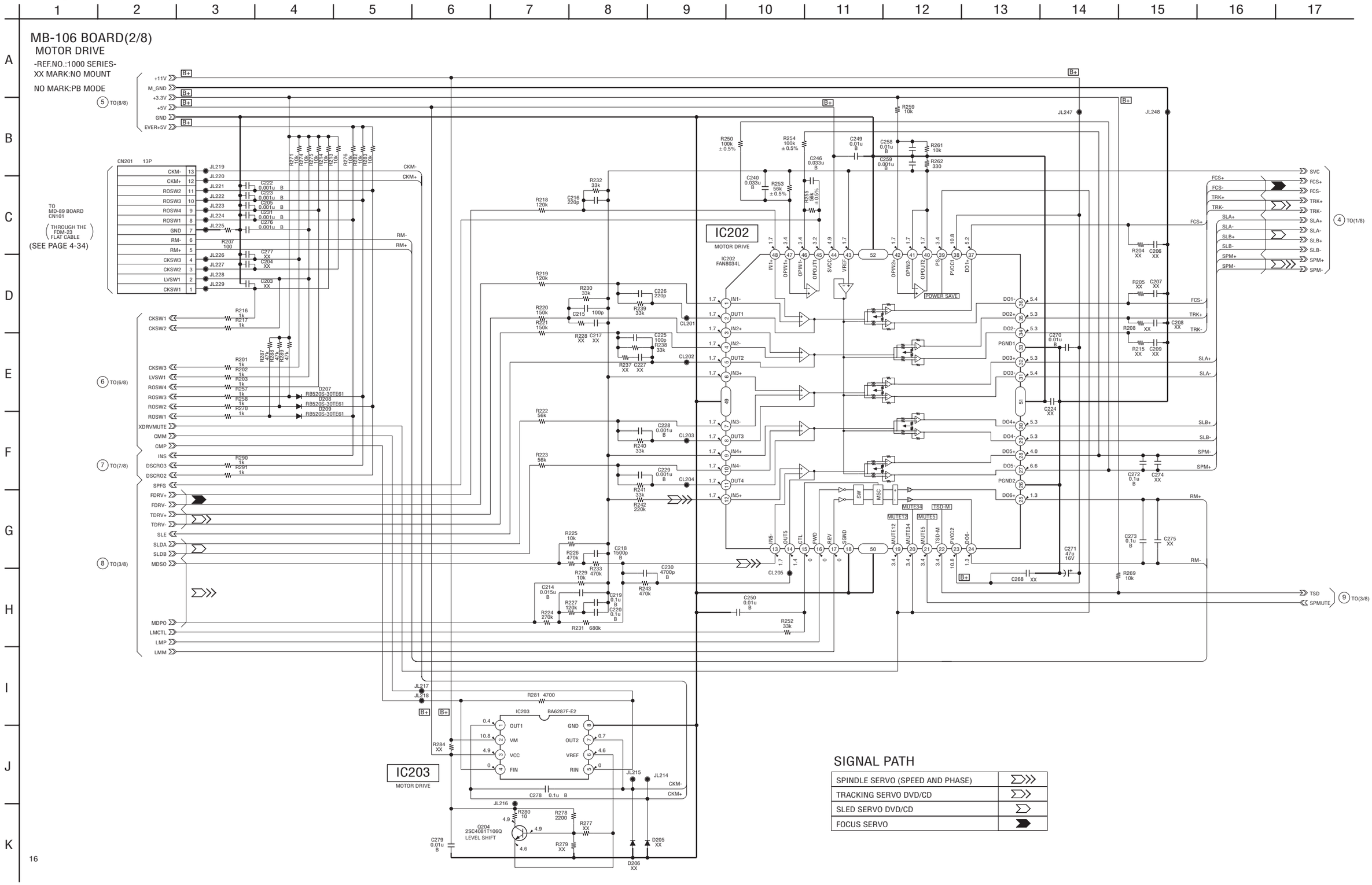
D603	D-6
IC101	C-1
IC103	E-5
IC106	D-2
IC201	C-6
IC202	A-6
IC203	A-6
IC303	B-5
IC401	D-5
IC402	E-2
IC601	E-6
IC602	D-6
IC701	A-3
Q201	C-6
Q202	B-6
Q204	A-5
Q604	E-6
Q605	D-6
Q608	E-6
Q609	D-6
Q610	E-6
Q611	D-6
Q701	E-5

For Schematic Diagram
- Refer to page 4-7 for printed wiring board.
- Refer to page 4-5 for waveforms.

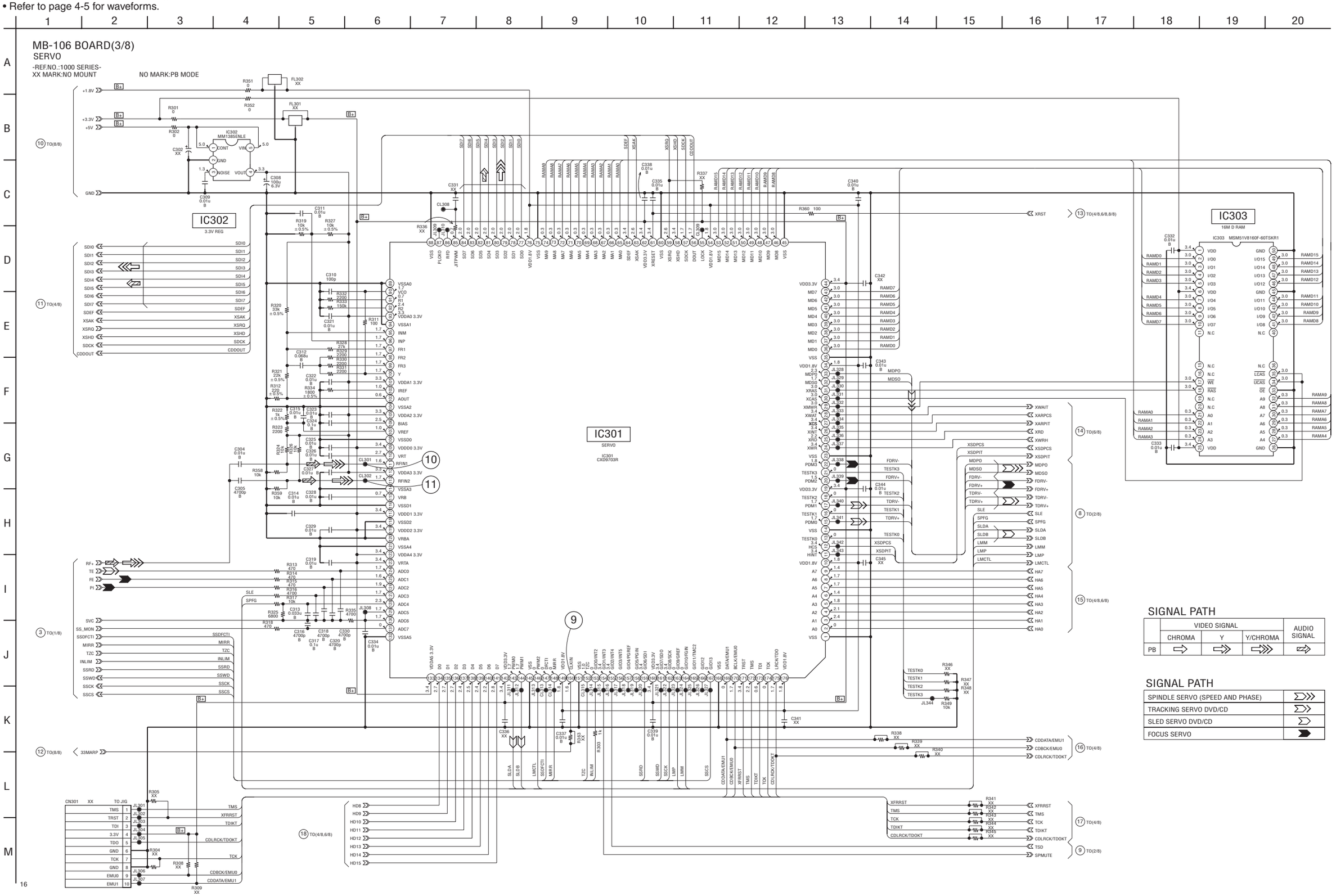


For Schematic Diagram

• Refer to page 4-7 for printed wiring board.



For Schematic Diagram
- Refer to page 4-7 for printed wiring board.
- Refer to page 4-5 for waveforms.



For Schematic Diagram

- Refer to page 4-7 for printed wiring board.
- Refer to page 4-5 for waveforms.

MB-106 BOARD(4/8)

AV DECODER

-REF.NO.:1000 SERIES-

XX MARK:NO MOUNT

NO MARK:PB MODE

IC403

AV DECODER

IC403
CXD1935Q

IC401

-1.8V REG

IC402

+3.3V REG

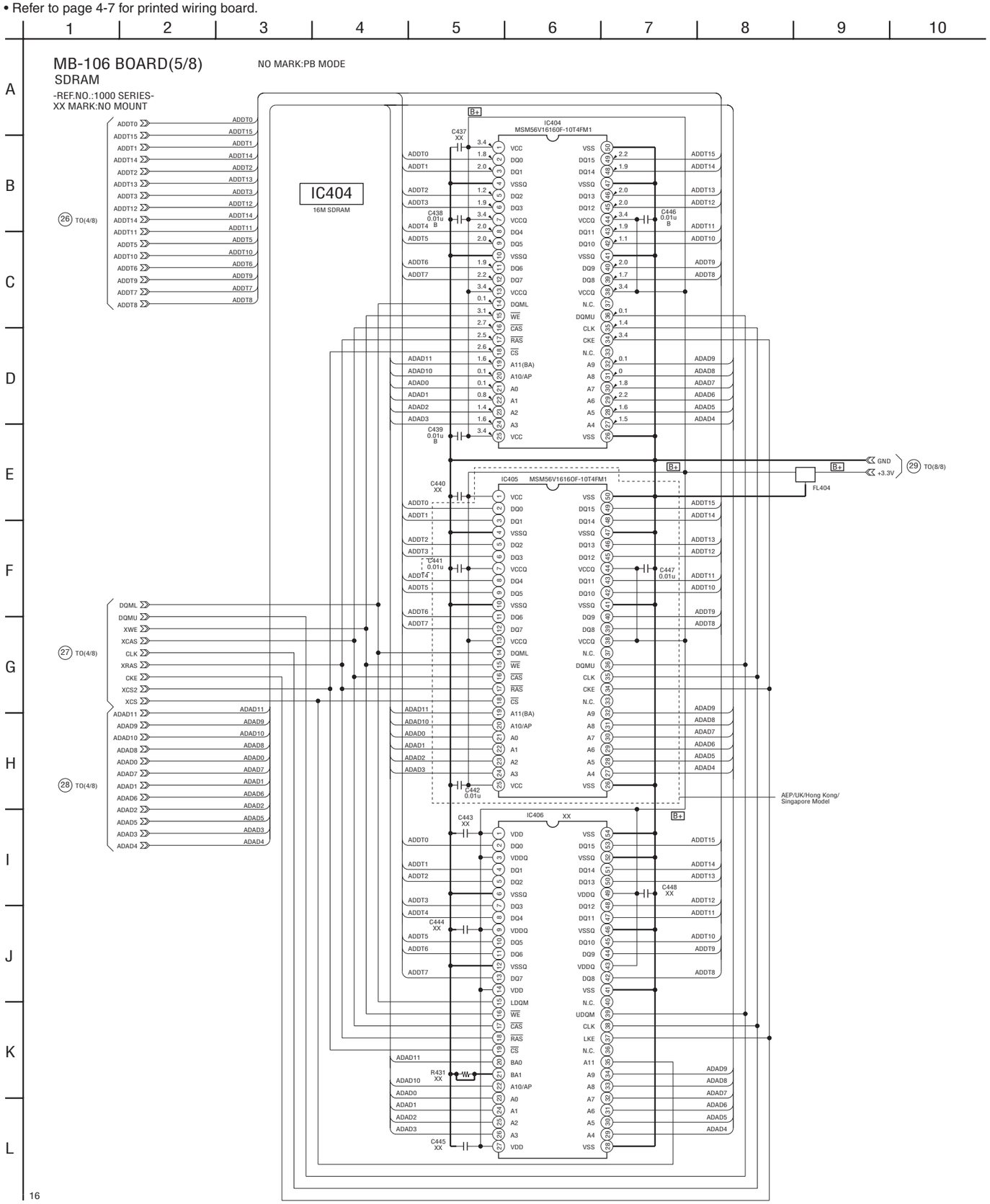
SIGNAL PATH

	VIDEO SIGNAL			AUDIO SIGNAL
	CHROMA	Y	Y/CHROMA	
PB	⇨	⇨	⇨	⇨

AV DECODER
MB-106 (4/8)

For Schematic Diagram

• Refer to page 4-7 for printed wiring board.



http://getMANUAL.com

For Schematic Diagram

- Refer to page 4-7 for printed wiring board.
- Refer to page 4-5 for waveform.

MB-106 BOARD(6/8)

SYSTEM CONTROL

-REF.NO.:1000 SERIES-

XX MARK:NO MOUNT

NO MARK:PB MODE

IC101 EEPROM

IC101 BR24C16F-E2

IC104 SYSTEM CONTROL

IC104 MB91307RPFV-G-BND-E1

IC106 FLASH MEMORY

IC106 MBM29LV160BE-90TN

IC107 XX

R169,R164: XX XX US,Canadian Model; 47k 12k AEP,UK,Australian,New Zealand Model; 12k 22k Argentina,Mexican Model; 22k 2.2 Hong Kong,Singapore Model

AEP/UK/ Hong Kong/ Singapore Model

RB101 XX

RB102 10kx4

RB103 RB104 RB105 RB106 RB107 RB108 RB109 RB110 RB111 100

DIAG

CN103 6P: 6 TXD, 5 RXD, 4 GND, 3 +3.3V, 2 GND, 1 RF MON

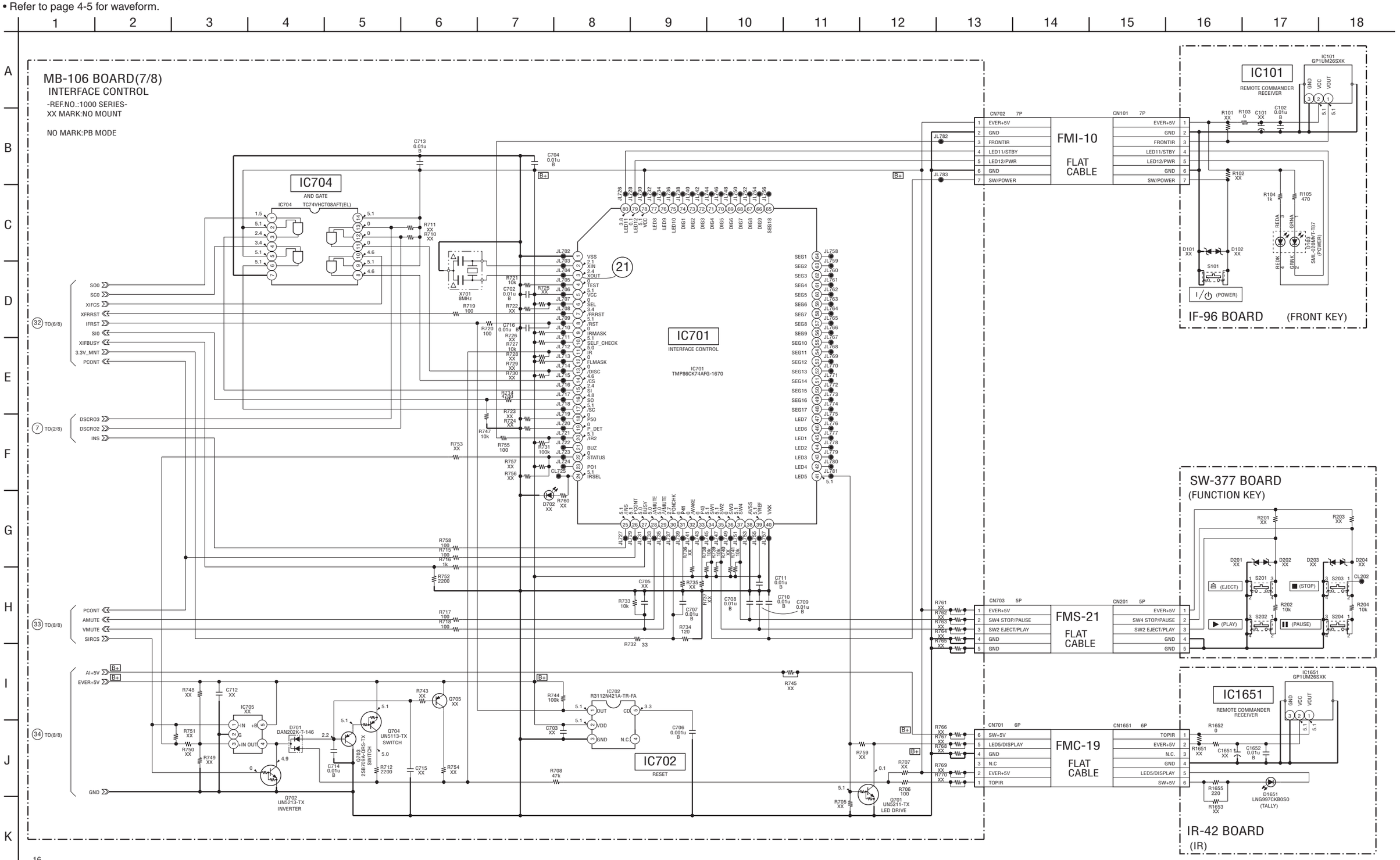
CN104 10P: 1 3.3V_MNT, 2 XFRRST, 3 XIFBUSY, 4 XIFCS, 5 SI0, 6 SO0, 7 SC0, 8 GND, 9 IFRST, 10 PCONT

(DIAG JIG)

(DL JIG)

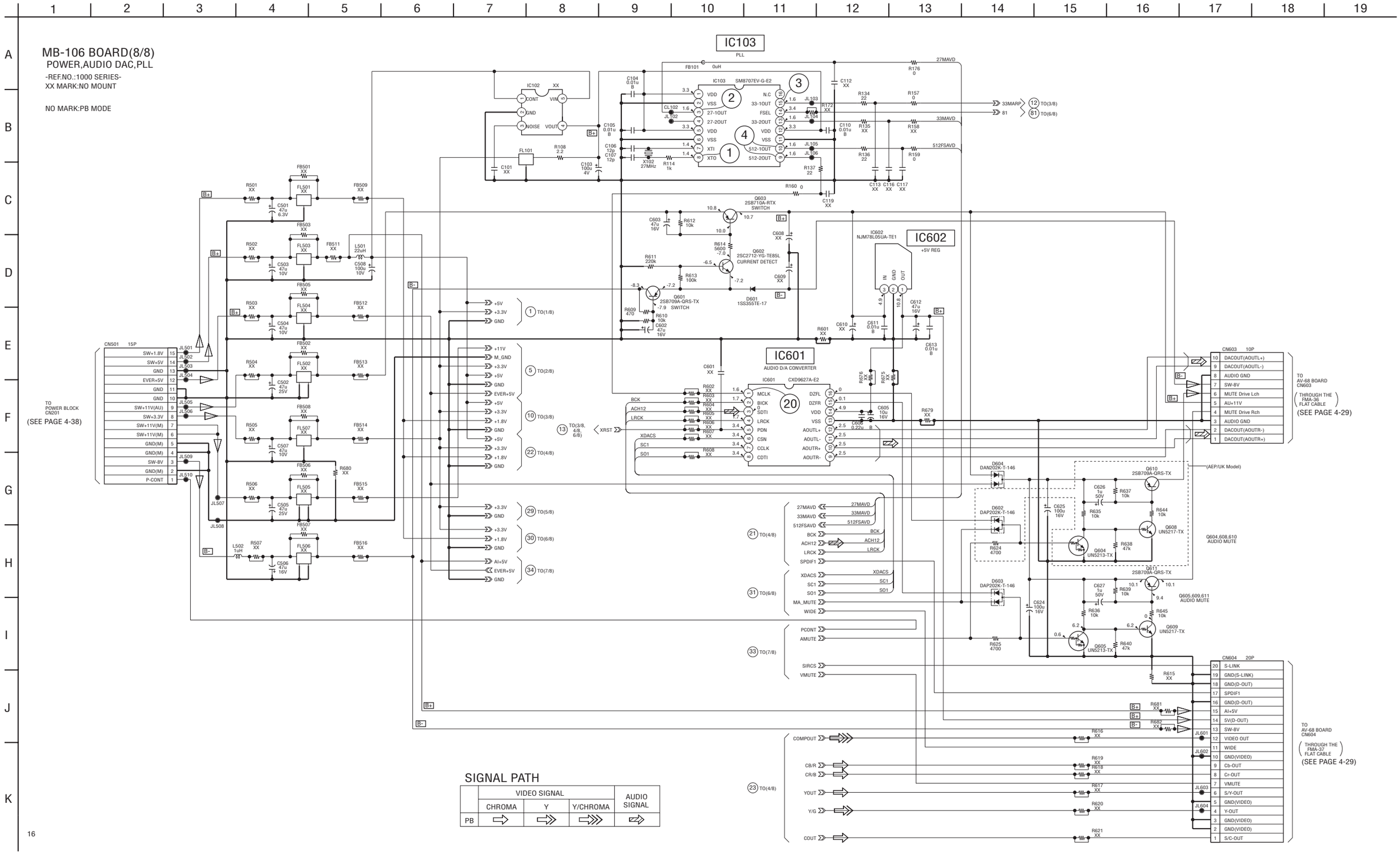
For Schematic Diagram

- Refer to page 4-7 for printed wiring board of MB-106 board.
- Refer to page 4-39 for printed wiring board of IR-42, SW-377, IF-96 boards.
- Refer to page 4-5 for waveform.



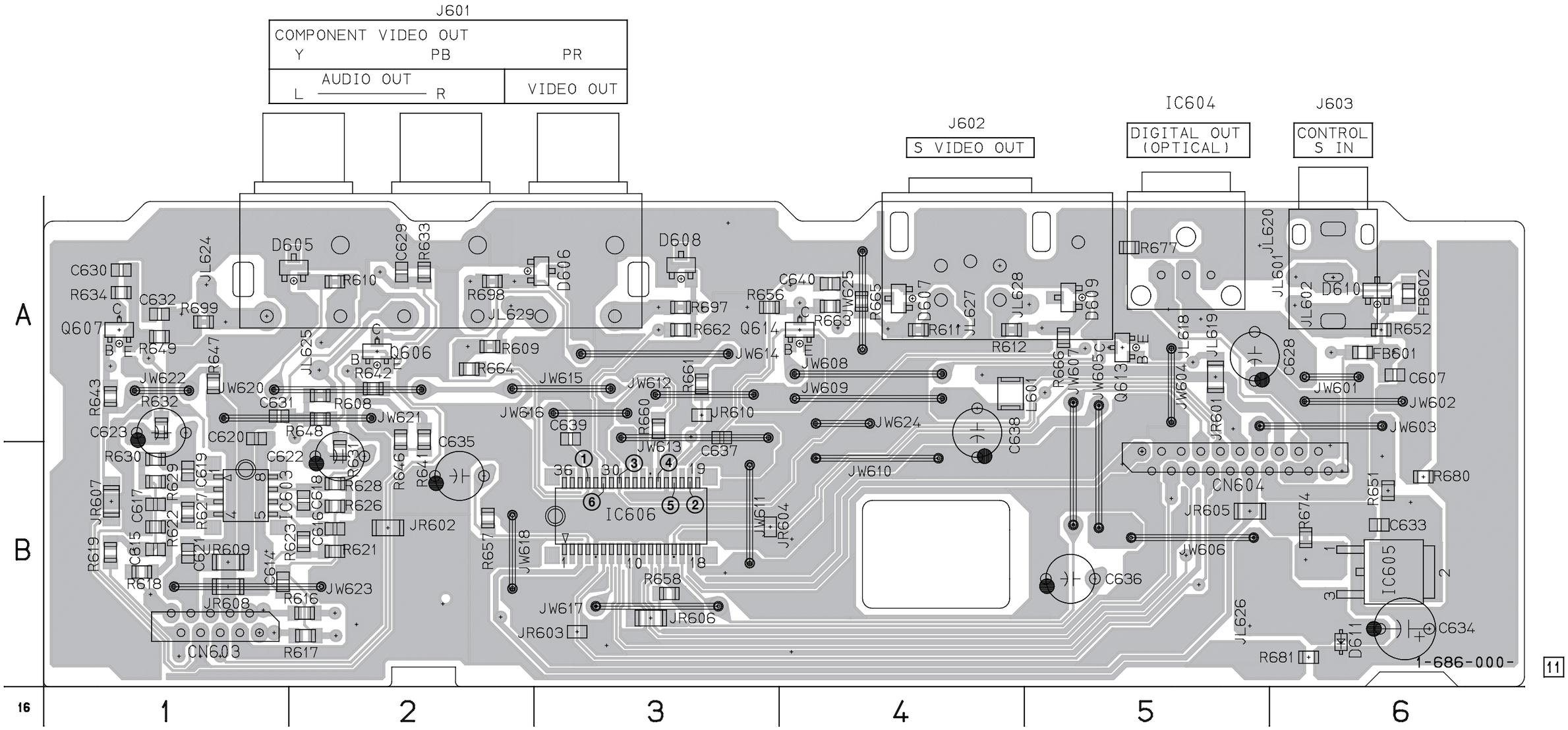
16

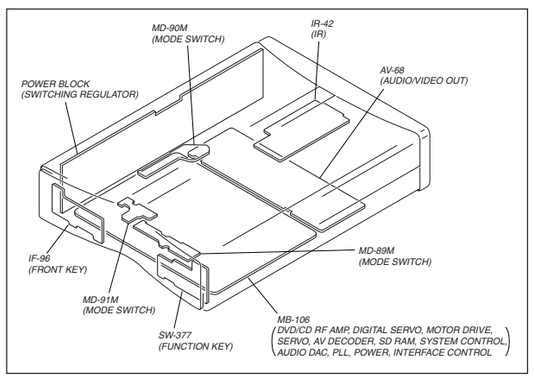
For Schematic Diagram
- Refer to page 4-7 for printed wiring board.
- Refer to page 4-5 for waveforms.



AV-68 (AV OUT) PRINTED WIRING BOARD

• : Uses unleaded solder.




MD-90M (MODE SWITCH)
IR-42 (IR)
POWER BLOCK (SWITCHING REGULATOR)
AV-68 (AUDIO/VIDEO OUT)
IF-96 (FRONT KEY)
MD-89M (MODE SWITCH)
MD-91M (MODE SWITCH)
SW-377 (FUNCTION KEY)
MB-106 (DVD/CD RF AMP, DIGITAL SERVO, MOTOR DRIVE, SERVO, AV DECODER, SD RAM, SYSTEM CONTROL, AUDIO DAC, PLL, POWER, INTERFACE CONTROL)

AV-68 BOARD

CN603 B-1
CN604 B-5

D605 A-2
D606 A-3
D607 A-4
D608 A-3
D609 A-5
D610 A-6

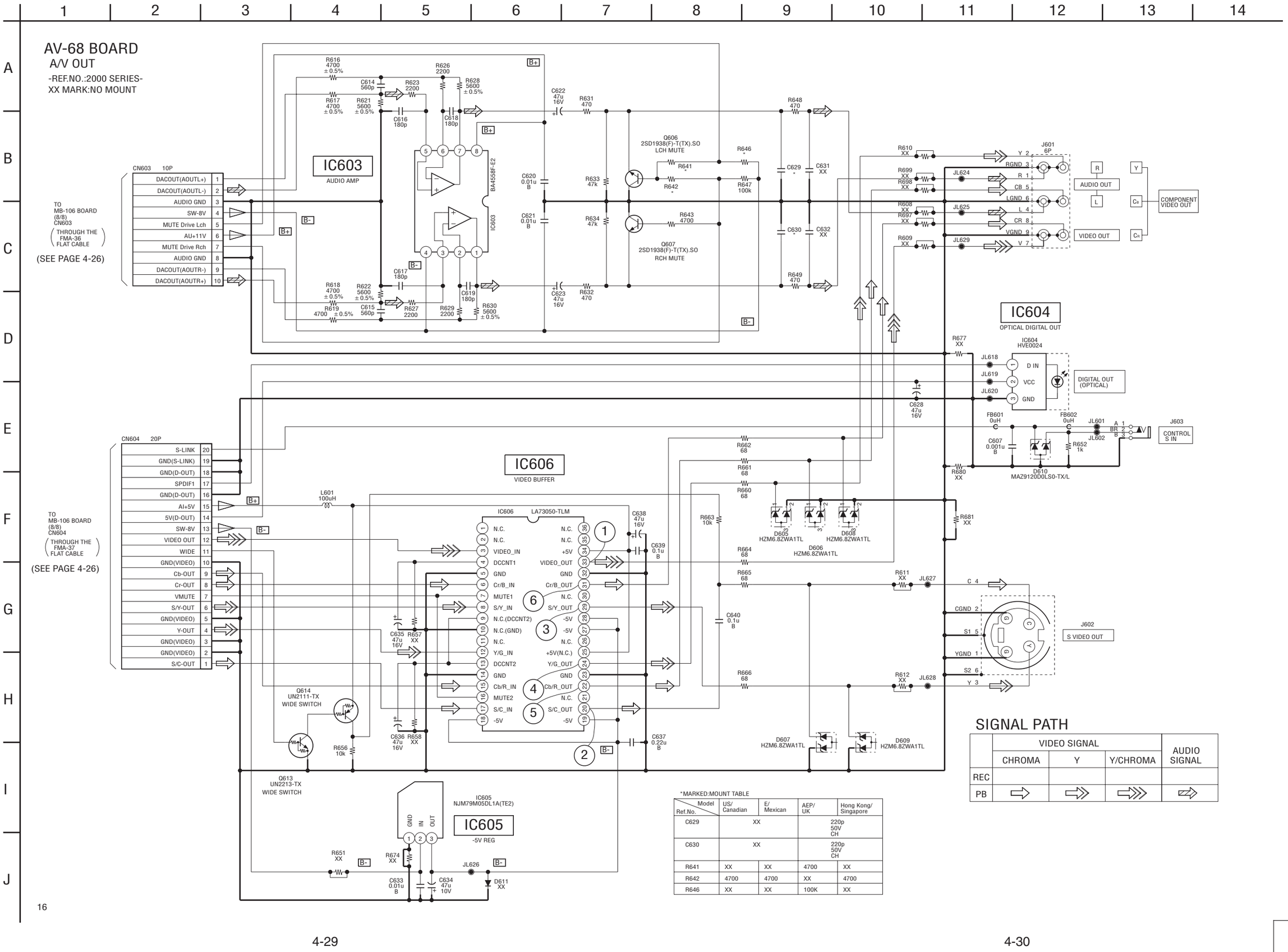
IC603 B-1
IC604 A-5
IC605 B-6
IC606 B-3

Q606 A-2
Q607 A-1
Q613 A-5
Q614 A-4

For printed wiring board

There are a few cases that the part printed on this diagram isn't mounted in this model.

For Schematic Diagram
- Refer to page 4-27 for printed wiring board.
- Refer to page 4-5 for waveforms.



*MARKED:MOUNT TABLE

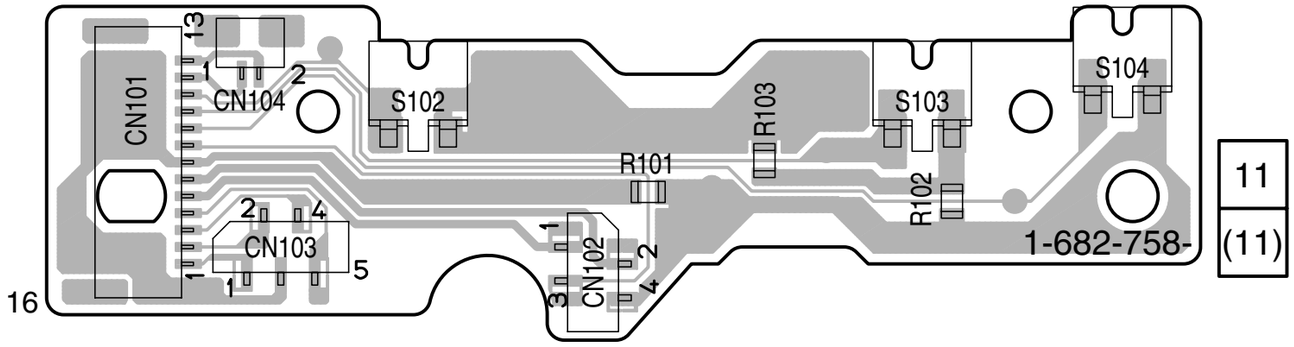
Ref.No. \ Model	US/ Canadian	E/ Mexican	AEP/ UK	Hong Kong/ Singapore
C629	XX		220p 50V CH	
C630	XX		220p 50V CH	
R641	XX	XX	4700	XX
R642	4700	4700	XX	4700
R646	XX	XX	100K	XX

SIGNAL PATH

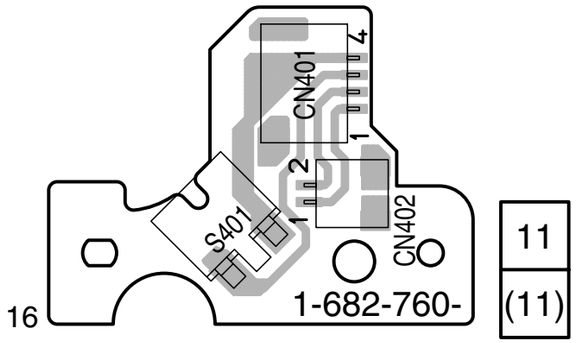
	VIDEO SIGNAL			AUDIO SIGNAL
	CHROMA	Y	Y/CHROMA	
REC				
PB	⇨	⇨	⇨	⇨

MD-89 (FUNCTION SWITCH 1), MD-90 (FUNCTION SWITCH), MD-91 (SWITCH) PRINTED WIRING BOARDS

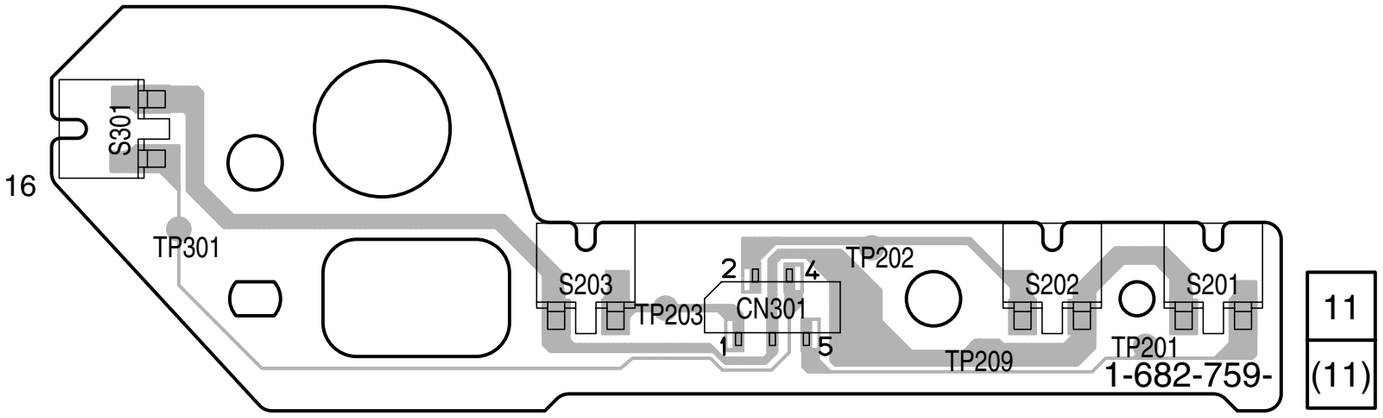
MD-89 BOARD (SIDE A)



MD-91 BOARD (SIDE A)

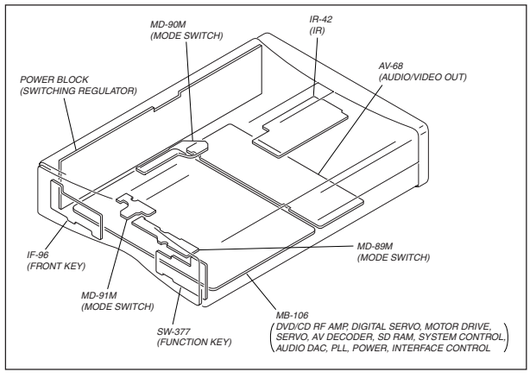


MD-90 BOARD (SIDE A)

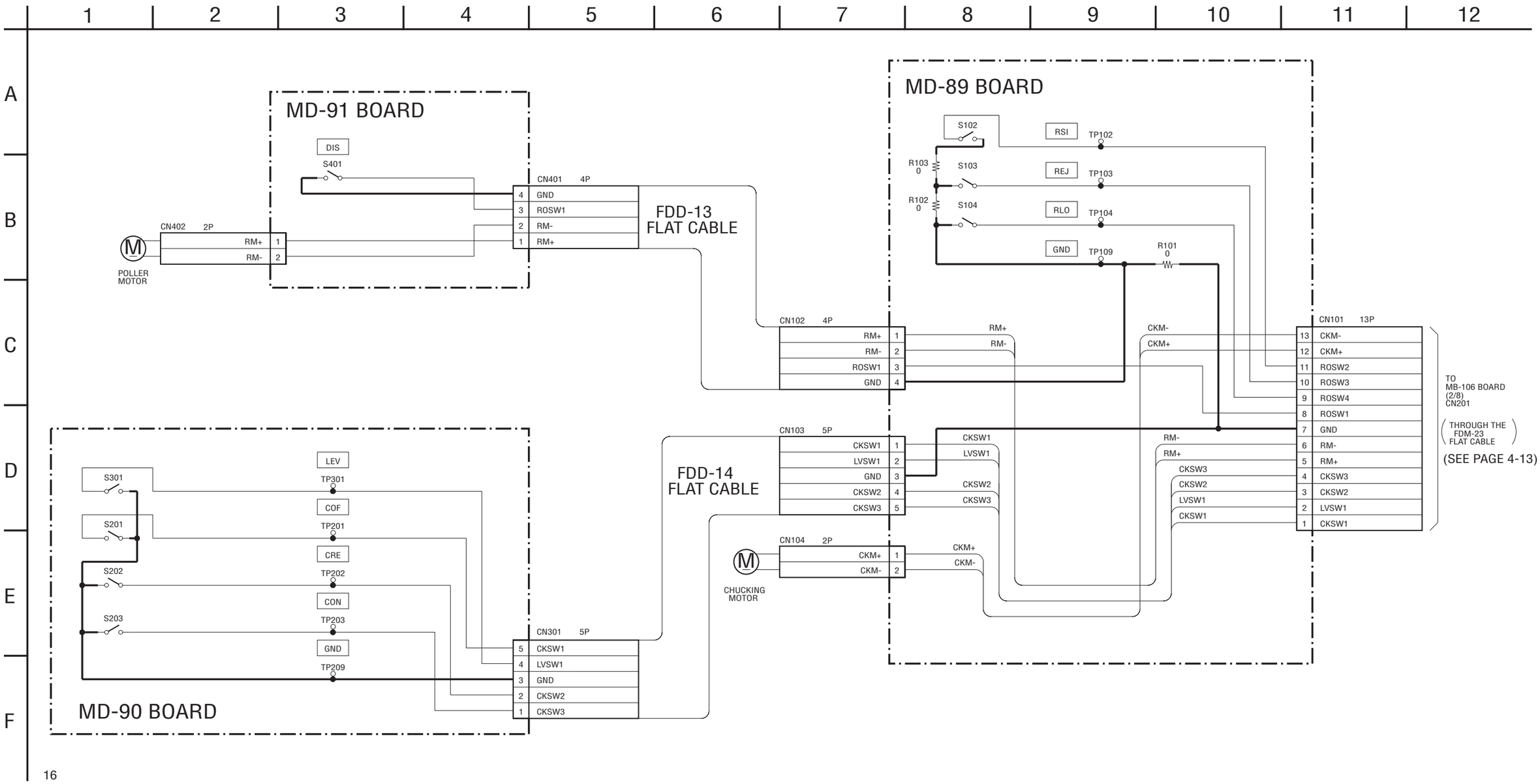


For printed wiring board

There are a few cases that the part printed on this diagram isn't mounted in this model.



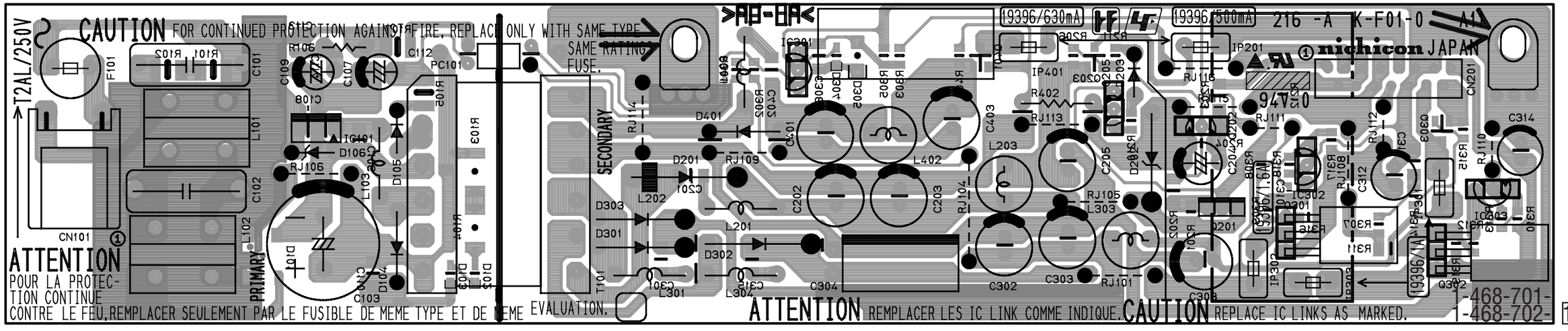
For Schematic Diagram
• Refer to page 4-31 for printed wiring board.



POWER BLOCK (ZSSR216GA/ZSSR216HA) PRINTED WIRING BOARD

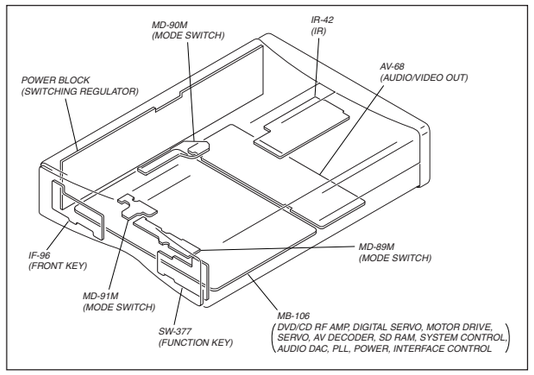
• : Uses unleaded solder.

SWITCHING REG
(ZSSR216GA: US,Canadian,Mexico Model) (ZSSR216HA: Other Country Model)



For printed wiring board

There are a few cases that the part printed on this diagram isn't mounted in this model.



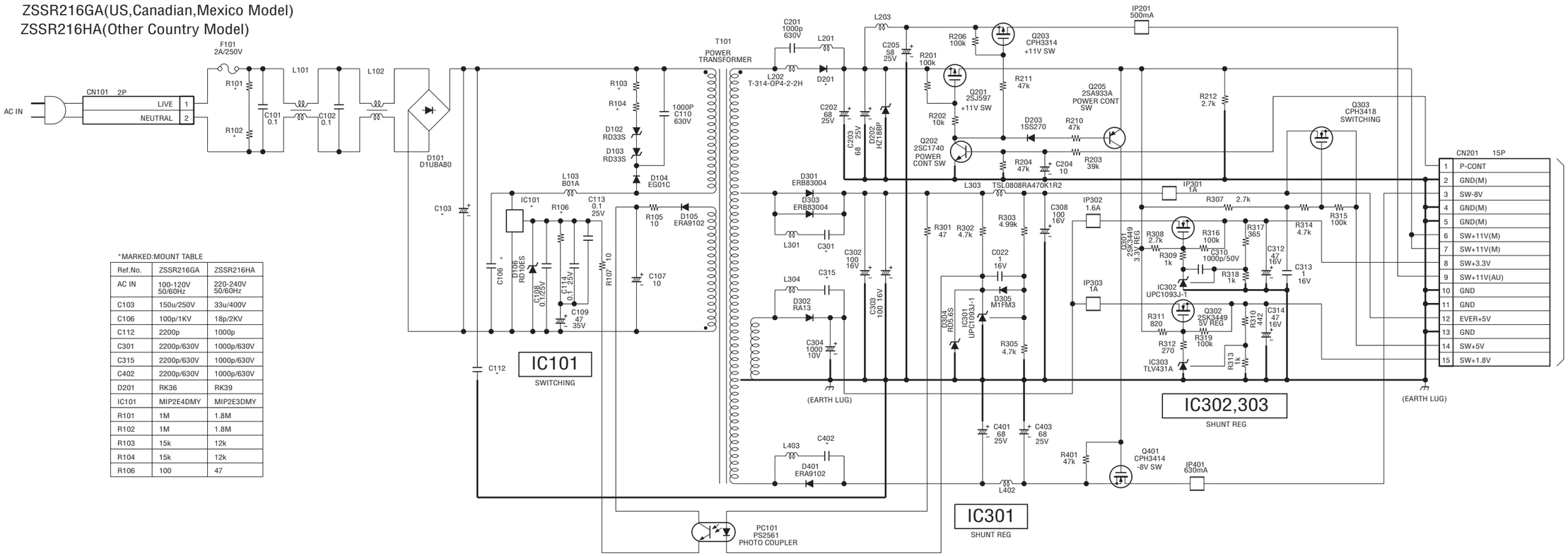
For Schematic Diagram

• Refer to page 4-35 for printed wiring board.

POWER BLOCK ⚠

ZSSR216GA(US,Canadian,Mexico Model)

ZSSR216HA(Other Country Model)



*MARKED:MOUNT TABLE

Ref.No.	ZSSR216GA	ZSSR216HA
AC IN	100-120V 50/60Hz	220-240V 50/60Hz
C103	150u/250V	33u/400V
C106	100p/1KV	18p/2KV
C112	2200p	1000p
C301	2200p/630V	1000p/630V
C315	2200p/630V	1000p/630V
C402	2200p/630V	1000p/630V
D201	RK36	RK39
IC101	MIP2E4DMY	MIP2E3DMY
R101	1M	1.8M
R102	1M	1.8M
R103	15k	12k
R104	15k	12k
R106	100	47

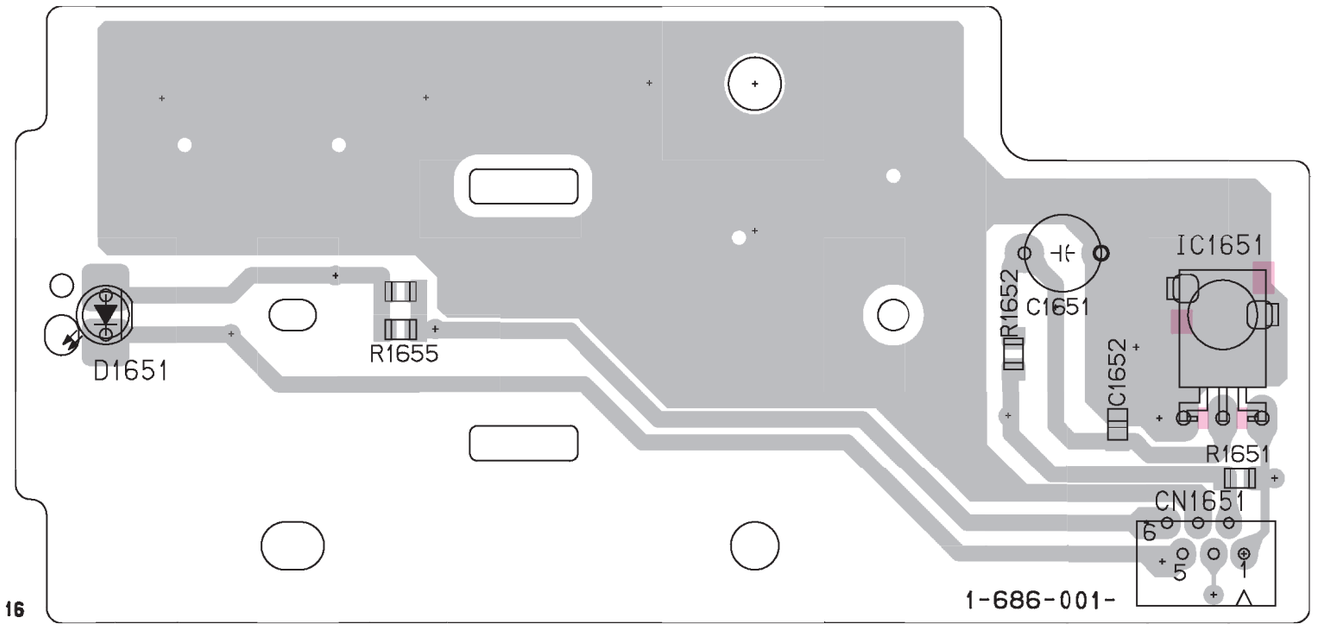
Note : The components identified by mark ⚠ or dotted line with mark ⚠ are critical for safety. Replace only with part number specified.	**Note :** Les composants identifiés par une marque ⚠ sont critiques pour la sécurité. Ne les remplacer que par une pièce portant le numéro spécifié.

IR-42 (IR), SW-377 (FUNCTION KEY), IF-96 (FRONT KEY) PRINTED WIRING BOARDS

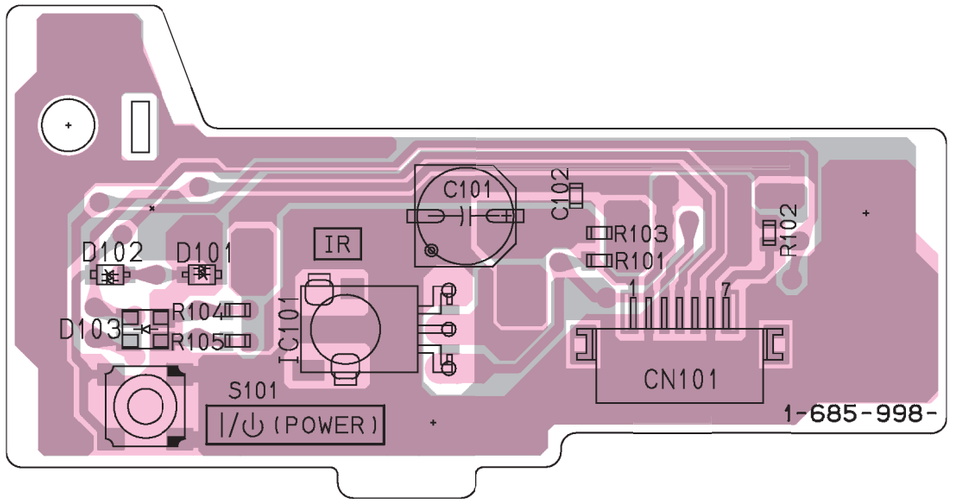
• Refer to page 4-24 for schematic diagrams.

• 4F : Uses unleaded solder. (IR-42 BOARD only)

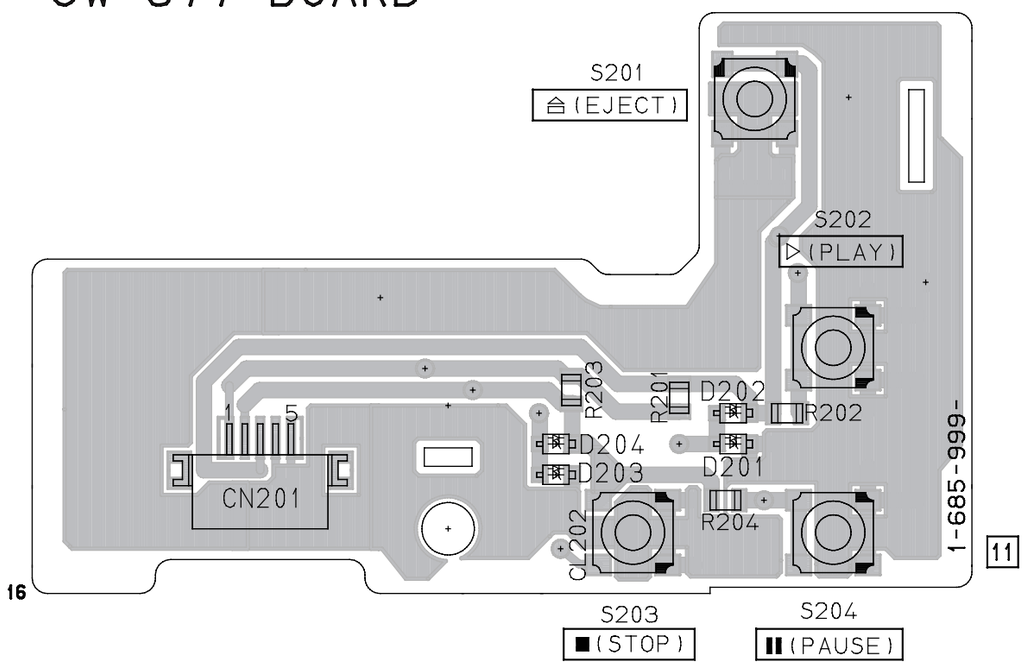
IR-42 BOARD



IF-96 BOARD

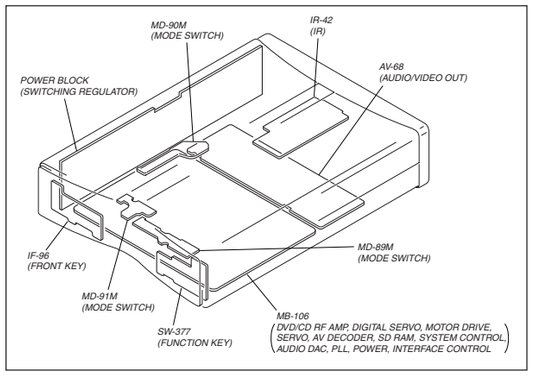


SW-377 BOARD



For printed wiring board

There are a few cases that the part printed on this diagram isn't mounted in this model.



SECTION 5
IC PIN FUNCTION DESCRIPTION

5-1. SYSTEM CONTROL PIN FUNCTION (MB-106 BOARD IC104: MB91307RPFV-G-BND-E1)

Pin No.	Pin Name	I/O	Function
1-5	HA17-HA21	O	Address bus A17 to A21
6	HA22	–	Not used
7	WP	O	I2C EEPROM write protect output
8	XSACS	–	Not used
9	AVCC	–	Power supply (+3.3 V)
10	AVRH	–	Reference power supply (+3.3 V)
11	AVSS	–	GND
12	AN0	I	Set of mode 0
13	AN1	I	Set of mode 1
14	AN2	I	Set of mode 2
15	AN3	I	Set of mode 3 (fixed at “H”)
16	INT0	I	AV DEC Interrupt input
17	INT1	I	ARP Interrupt input
18	INT2	I	SDSP Interrupt input
19	INT3	–	Not used
20	INT4	I	IF CON interrupt input
21	ROSW1	–	Roller sensor input1
22	ROSW2	–	Roller sensor input2
23	INT7	–	Not used
24	VCC	–	Power supply (+3.3 V)
25	SI0	I	Serial bus 0 (data input)
26	SO0	O	Serial bus 0 (data output)
27	SC0	O	Serial bus 0 (clock output)
28	SI1	–	Not used
29	SO1	O	Serial bus 1 (data output)
30	SC1	O	Serial bus 1 (clock output)
31	SI2	I	Serial bus 2 (data input)
32	SO2	O	Serial bus 2 (data output)
33	ROSW3	–	Roller sensor input3
34	VSS	–	GND
35	XRST	O	System reset signal output
36	WIDE	O	WIDE select signal output
37	CMP	O	Checking motor +
38	SDA	I/O	I2C data input/output
39	SCL	O	I2C clock output
40	ROSW4	–	Roller sensor input4
41	EUROV/Y	O	Not used
42	LVSW1	O	Lever sensor input1
43	MD0	I	Input of mode select 0 (fixed at “H”)
44	MD1	I	Input of mode select 1 (fixed at “L”)
45	MD2	I	Input of mode select 2 (fixed at “L”)
46	DREQ0	I	Input of DMA-REQ from AV DEC
47	DACK0	O	Output of DMA-ACK to AV DEC
48	XDRVMUTE	O	Drive mute signal output
49	DREQ1	I	AV DEC DMA-REQ 1 input
50	DACK1	O	AV DEC DMA-ACK 1 output
51	XIFCS	O	IF CON chip select signal output
52	VSS	–	GND
53	X1	O	Clock output (16.5 MHz)
54	X0	I	Clock input (16.5 MHz)

Pin No.	Pin Name	I/O	Function
55	VCC	–	Power supply (+3.3 V)
56	CKSW3	I	Chuck sensor input3
57	CKSW1	I	Tray sensor input1
58	CS0X	O	Chip select signal output (for external ROM)
59	CS1X	–	Not used
60	CS2X	O	AV DEC chip select signal output
61	CS3X	O	AV DEC chip select signal output
62	CS4X	O	ARP chip select signal output
63	CS5X	O	SDSP chip select signal output
64	VCCI	–	Power supply (+1.8 V)
65	CS6X	–	Not used
66	CX7X	–	Not used
67	XWAIT	I	Wait signal input
68	BGRNTX	I	Test terminal (fixed at “H”)
69	BRQ	I	Test terminal (fixed at “L”)
70	XRD	O	Read enable signal output
71	XWRH	O	High order byte write enable signal output
72	XWRL	–	Not used
73	NMIX	I	Not used (Fixed at “H”)
74	VCCI	–	Power supply (+1.8 V)
75	VSS	–	GND
76	XFRRST	I	IF CON reset signal input
77	CPUCK	O	CPU clock signal output
78	CKSW2	–	Chuck sensor input2
79	XDACS	O	DAC (2 CH) chip select signal output
80	CMM	–	Chucking motor –
81	48/44.1K	O	PLL FS control signal output
82	XLDON	O	LD mute signal output
83	MAMUTE	O	Audio mute signal output
84	SRAMWE	–	Not used
85-92	HD0-HD7	I/O	Data bus D0 to D7 (16 bits only)
93-100	HD8-HD15	I/O	Data bus D8 to D15 (16 bits) and D0 - D7 (8 bits)
101	VSS	–	GND
102-109	HA0-HA7	O	Address bus A00 to A07
110	VCC	–	Power supply (+3.3 V)
111-118	HA8-HA15	O	Address bus A08 to A15
119	VSS	–	GND
120	HA16	O	Address bus A16

SECTION 6
TEST MODE

6-1. GENERAL DESCRIPTION

The Test Mode allows you to make diagnosis and adjustment easily using the remote commander and monitor TV. The instructions, diagnostic results, etc. are given on the on-screen display (OSD).

6-2. STARTING TEST MODE

Press the [TOP MENU], [CLEAR], [POWER] keys on the remote commander in this order with the power of main unit in OFF status, and the Test Mode starts, then "DIAG START" will be displayed on the fluorescent display tube and the menu shown below will be displayed on the TV screen. At the bottom of menu screen, the model name and revision number are displayed. Last Off at the lower right of screen indicates the information code concerning the last power off. To execute each function, select the desired menu and press its number on the remote commander. To exit from the Test Mode, press the [POWER] key.

```
          Test Mode Menu

0. Syscon Diagnosis
1. Drive Auto Adjustment
2. Drive Manual Operation
3. Mecha Aging
4. Emargency History
5. Version Information
6. Video Level Adjustment
                  Exit: Power Key
_
Model    : DPX-16xxxx
Revision : x.xxx    Last Off: xx
```

Power Off Information Code List

00: Primary Power Off
01: Power Off Request from SYSTEM CONTROL
02: Power Off by Emergency Power Off Command from SYSTEM CONTROL
(if information is sent from SYSTEM CONTROL)
03: IF CON Judged that SYSTEM CONTROL is Faulty
04: Power Off from Diagnosis Mode of IF CON
05: Forced Power Off by the User
06: Power Off by Power Supply Voltage Monitor

6-3. SYSCON DIAGNOSIS

The same contents as board detail check by serial interface can be checked from the remote commander. On the Test Mode Menu screen, press [0] key on the remote commander, and the following check menu will be displayed.

```
    ### Syscon Diagnosis ###
                 Check Menu
0. Quit
1. All
2. Version
3. Peripheral
4. Servo
5. Supply
6. AV Decoder
7. Video
8. Audio
_
```

0. (Quit)

Quit the Syscon Diagnosis and return to the Test Mode Menu.

1. (All items continuous check)

This menu checks all diagnostic items continuously. Normally, all items are checked successively one after another automatically unless an error is found, but at a certain item that requires judgment through a visual check to the result, the following screen is displayed for the key entry.

```
    ### Syscon Diagnosis ###

         Diag All Check
          No. 2 Version

 2-3. ROM Check Sum
Check Sum = 2005



Press NEXT Key to Continue
Press PREV key to Repeat
_
```

For the ROM Check, the check sum calculated by the Syscon is output, and therefore you must compare it with the specified value for confirmation.
Following the message, press [▶▶I] key to go to the next item, or [I◀◀] key to repeat the same check again.

To quit the diagnosis and return to the Check Menu screen, press ■ or ENTER key. If an error occurred, the diagnosis is suspended and the error code is displayed as shown below.

```
    ### Syscon Diagnosis ###


 3-2. EEPROM Check
Error 03: EEPROM  Write/Read N
Address       : 00000001
Write Data    : 2492
Read   Data   : 2490
Press NEXT Key to Continue
Press PREV key to Repeat
_
```

Press ■ key to quit the diagnosis, or ⏮ key to repeat the same item where an error occurred, or ⏭ key to continue the check from the item next to faulty item.

Selecting 2 and subsequent items call the submenu screen of each item. When "———" is displayed in the submenu, it means that the test is not supported in the model.

For example, if "5. Supply" is selected, the following submenu will be displayed.

```
    ### Syscon Diagnosis ###
           Check Menu
         No. 5 Supply
0. Quit
1. All
2. ARP Register Check
3. ARP to RAM Data Bus
4. ARP to RAM Address Bus
5. ARP RAM Check
_
```

0. (Quit)
Quit the submenu and return to the main menu.

1. (All submenu items continuous check.)
This menu checks 2 and subsequent items successively. At the item where visual check is required for judgment or an error occurred, the checking is suspended and the message is output for key entry. Normally, all items are checked successively one after another automatically unless an error is found.
Selecting 2 and subsequent items executes respective menus and outputs the results.
For the contents of each submenu, see "General Description of Checking Method" and "Check Items List".

General Description of Checking Method
2. Version
(2-2) Revision
ROM revision number is displayed.
Error: Not detected.
The revision number defined in the source file is displayed with four digits.

(2-3) ROM Check Sum
Check sum is calculated.
Error: Not detected.
8-bit data are added up to the ROM address 0x000F0000 to 0x002EFFFF, and the result is displayed with 4-digit hexadecimal number. Error is not detected. Compare the result with the specified value.

(2-4) Model Type
Model code is displayed.
Error: Not detected.
The model code read from the EEPROM is displayed with 2-digit hexadecimal number.

(2-5) Region
Region code is displayed.
Error: Not detected.
The region code determined from the model code is displayed.

(2-6) M't Check
Mount resistance is checked.
Error 22: The region code does not accord.
Check whether the region code that is deduced from model resistance and destination resistance accords with the region code that is deduced from region resistance value.

3. Peripheral

(3-2) EEPROM Check
Data write ⟶ read, and accord check
Error 03: EEPROM write/read discord
0x9249, 0x2942 and 0x4294 are written to the address 0x00 to 0xFF of the EEPROM and then read for checking. Before writing, the data are saved, then after checking, they are written to restore the contents of EEPROM.

4. Servo

(4-2) Servo DSP Check
Data write ⟶ read, and accord check
Error 12: Read data discord
0x9249, 0x2942 and 0x4294 are written to the RAM address 0x602 of the Servo DSP and then read for checking.

(4-3) ——————
Check no support.

(4-4) RF Amp Register Check
Data write ⟶ read, and accord check
Error 13: RF Amp register write, and read data discord
Implement 8-bit shift operation of the 0x01 to the readable/writable register of the RF Amp. If once write data do not accord with read data, it is NG.

5. Data Supply System

(5-2) ARP Register Check
Data write ⟶ read, and accord check
Error 08: ARP register write, and read data discord
Data 0x00 to 0xFF is written sequentially to the ARP TMAX register (address 0xC6) and then read for checking.

(5-3) ARP to RAM Data Bus
Data write ⟶ read, and accord check
Error 09: ARP ⟷ RAM data bus error
Data 0x0001 to 0x8000 where one bit each is set to 1 are written to the address 0 of RAM (IC303) connected to the ARP (IC302) through the bus, then they are read and checked. In case of discord, written bit pattern and read data are displayed. If data where multiple bits are 1 are read, the bits concerned may touch each other. Further, if data where certain bit is always 1 or 0 regardless of written data, the line could be disconnected or shorted.

(5-4) ARP to RAM Address Bus
Data write ⟶ other address read discord check
Error 10: ARP ⟷ RAM address bus error
Caution: Address and data display in case of an error is different from the display of other diagnosis (described later).
Before starting the test, all addresses of RAM (IC303) are cleared to 0x0000.
First, 0xA55A is written to the address 0x00000, and the address data are read and checked from addresses 0x00001 to 0x80000 while shifting 1 bit each. Next, the data at that address is cleared, and it is written to the address 0x00001, and read and checked in the same manner. This check is repeated up to the address 0x80000 while shifting the address data by 1 bit each.
If data other than 0 is read at the addresses except written address, an error is given because all addresses were already cleared to 0. In this check, the error display pattern is different from that of other diagnosis; read data, written address, and read address are displayed in this order. However, the message uses same template, and accordingly exchange Address and Data when reading. The following display, for example,

```
    ### Syscon Diagnosis ###




 5-4. ARP to RAM Address Bus
Error 10: ARP - RAM Address B
Address       : 0000A55A
Write Data    : 00000000
Read Data     : 00080000
Press NEXT Key to Continue
Press PREV key to Repeat
_
```

shows the data 0xA55A was read from address 0x00080000 though it was written to the address 0x00000000. This implies that these addresses are in the form of shadow. Also, if the read data is not 0xA55A, another error will be present.

(5-5) ARP RAM Check
Data write ⟶ read, and accord check
Error 11: ARP RAM read data discord
The program code data stored in ROM are copied to all areas of RAM (IC303) connected to the ARP through the bus, then they are read and checked if they accord. If the detail check was selected initially, the data are written to all areas and read, then the same test is conducted once again with the data where all bits are inverted between 1 and 0. If discord is detected, faulty address, written data, and read data are displayed following the error code 11, and the test is suspended.

6. AV Decoder

(6-2) 1935 RAM

Data write ⟶ read, and accord check

Error 14: AVD RAM read data discord

The program code data stored in ROM (IC107) are copied to all areas of RAM (IC504, IC505) connected to the AVD through the bus, then they are read and checked if they accord. Further, the same test is conducted once again with the data where all bits are inverted between 1 and 0. If discord is detected, faulty address, written data, and read data are displayed following the error code 14, and the test is suspended.

During the test, OSD display becomes blank as the OSD area is also checked.

(6-3) 1935 SP

ROM ⟶ AVD RAM ⟶ Video OUT

Error: Not detected.

The data including sub picture streams in ROM are transferred to the RAM in AVD, and output as video signals from the AVD.

Though OSD display becomes blank, the output of video signals continues until the key is pressed.

7. Video Output

(7-2) Color Bar

AVD color bar command write ⟶ Video OUT

Error: Not detected.

The command is transferred to the AVD, and the color bar signals are output from video terminals.

8. Audio Output

(8-2) ARP ⟶1935

Data flow from supply system DRAM to SDRAM of AV Decoder is tested.

Error 15: ARP ⟶ 1935 video NG

16: ARP ⟶ 1935 audio NG

(8-3) Test Tone

Pink noise output

Error: Not detected.

In the models without DD output, the test tone is output from L and R of 2-channel only, and in the models with DD output, the test tone is output from L and R of 2-channel, and all channels of 5.1 output.

After turning on all outputs, each time the NEXT key is pressed, the output channel is switched for individual channel checking.

Diagnosis Check Items List

2. Version Display

(2-2) Revision
(2-3) ROM Check Sum
(2-4) Model Type
(2-5) Region
(2-6) M't Check

3. Peripheral

(3-2) EEPROM Check

4. Servo

(4-2) Servo DSP Check
(4-3) ———— (Function not supported)
(4-4) RF Amp Register Check

5. Data Supply System

(5-2) ARP Register Check
(5-3) ARP to RAM Data Bus
(5-4) ARP to RAM Address Bus
(5-5) ARP RAM Check

6. AV Decoder

(6-2) 1935 RAM
(6-3) 1935 SP

7. Video Output

(7-2) Color Bar

8. Audio Output

(8-2) ARP ⟶1935
(8-3) Test Tone

Error Codes List

00: Error not detected
01: RAM write/read data discord
02: GATE array NG
03: EEPROM NG
04: Flash memory clear error
05: Flash memory write error
06: Flash memory read data discord
08: ARP register read data discord
09: ARP ←→ RAM data bus error
10: ARP ←→ RAM address bus error
11: ARP RAM read data discord
12: Servo DSP NG
13: RF Amp NG
14: 1935 SDRAM NG
15: ARP →1935 video NG
16: ARP →1935 audio NG
1A: System call error (Function not supported)
1B: System call error (Parameter error)
1C: System call error (Illegal ID number)
20: System call error (Time out)
22: Resistor installation error
90: Error occurred
91: User verification NG
92: Diagnosis cancelled

6-4. DRIVE AUTO ADJUSTMENT

DVD reference disc
Single Layer
HLX-503 (J-6090-069-A) (NTSC) OR
HLX-504 (J-6090-088-A) (NTSC)
Dual Layer
HLX-501 (J-6090-071-A) (NTSC) OR
HLX-505 (J-6090-089-A) (NTSC)

TEST CD
YEDS-18 (3-702-101-01)

On the Test Mode Menu screen, press [1] key on the remote commander, and the drive auto adjustment menu will be displayed.

```
   ## Drive Auto Adjustment ##

         Adjustment Menu

0. ALL
1. DVD-SL
2. CD
3. DVD-DL
4. LCD


                      Exit: RETURN
```

Normally, [0] is selected to adjust DVD (single layer), CD, and DVD (dual layer) in this order. But, individual items can be adjusted for the case where adjustment is suspended due to an error. In this mode, the adjustment can be made easily through the operation following the message displayed on the screen. Which disc is currently adjusted is displayed on the fluorescent display tube.

0. ALL

You will be asked if EEPROM data are initialized or not, and for this prompt, select [0] and press the [ENTER] key. First, the servo setting data in EEPROM, Emergency History and Hour Meter are cleared to initialize. Then, [1] DVD-SL disc, [2] CD disc, and [3] DVD-DL disc are adjusted in this order. Each time one disc was adjusted, it is ejected, and therefore exchange the disc following the message. You can exit the adjustment by pressing the [■] button. In adjusting each disc, the mirror time is measured to check the disk type. In the auto adjustment, whether the disc type is correct is not checked unlike conventional models, and accordingly, take care not to insert a different type of disc.

1. DVD Single Layer Disc

Select [1], insert DVD single layer disc, and press [ENTER] key, and the adjustment will be made through the following steps, then adjusted values will be written to the EEPROM.

DVD Single Layer Disc Adjustment Steps

1. Sled Reset
2. Disc Check Memory SL
3. Set Disc Type SL
4. Spdl Start
5. Ld ON
6. Focus Error Check
7. Focus ON 0 with PI Level measure
8. Auto Track Offset Adjust L0
9. Trv Level Check
10. Tracking ON
11. CLVA ON
12. Sled ON
13. Auto Focus Balance Adjust
14. Auto Loop Filter Offset Adjust
15. Auto Focus Gain Adjust L0
16. Auto Focus Balance Adjust L0
17. EQ Boost Adjust
18. Auto Loop Filter Offset Adjust
19. Auto Tracking Gain Adjust
20. RF Level Measure
21. Jitter measure
22. Eep Copy Loop Filter Offset
23. All Servo Stop

2. CD Disc

Select [2], insert CD disc, and press [ENTER] key, and the adjustment will be made through the following steps, then adjusted values will be written to the EEPROM.

CD Adjustment Steps

1. Sled Reset
2. Disc Check Memory CD
3. Set Disc Type CD
4. Spdl Start
5. LD ON
6. Focus Error Check
7. Fcs ON 1 with PI Level measure
8. Auto Track Offset Adjust L0
9. Trv Level Check
10. Tracking ON
11. CLVA ON
12. Sled ON
13. Auto Focus Balance Adjust
14. Auto Loop Filter Offset Adjust
15. Auto Focus Gain Adjust L0
16. Auto Focus Balance Adjust L0
17. Eq Boost Adjust
18. Auto Loop Filter Offset Adjust
19. Auto Track Gain Adjust
20. Copy Adjustment Data to LCD
21. RF Level Measure
22. Jitter measure
23. All Servo Stop

3. DVD Dual Layer Disc

Select [3], insert DVD dual layer disc, and press [ENTER] key, and the adjustment will be made through the following steps, then adjusted values will be written to the EEPROM.

DVD Dual Layer Disc Adjustment Steps

1. Sled Reset
2. Disc Check Memory DL
3. Set Disc Type DL
   DVD DL Layer 1 Adjust
4. Spdl Start
5. LD ON
6. Fcs ON 1 with PI Level measure
7. Auto Track Offset Adjust L1
8. Tracking ON
9. Clva ON
10. Sled ON
11. Auto Focus Balance Adjust
12. Auto Focus Gain Adjust L1
13. Auto Focus Balance Adjust L1
14. Eq Boost Adjust L1
15. Auto Track Gain Adjust L1
16. Jitter measure
    DVD DL Layer 0 Adjust
17. Focus Jump (L1 → L0)
18. Auto Track Offset Adjust L0
19. Tracking ON
20. Clva ON
21. Sled ON
22. Auto Focus Balance Adjust
23. Auto Focus Gain Adjust L0
24. Auto Focus Balance Adjust
25. Eq Boost Adjust L0
26. Auto Track Gain Adjust L0
27. Jitter measure
28. All Servo Stop

4. LCD

LCD disc is not adjusted because the adjusted data of CD are reflected, and SACD (hybrid disc) is not adjusted because the adjusted data of CD and DVD-DL are reflected.

6-5. DRIVE MANUAL OPERATION

On the Test Mode Menu screen, select [2], and the manual operation menu will be displayed. For the manual operation, each servo on/off control and adjustment can be executed manually.

```
   ## Drive Manual Operation ##

          Operation Menu
1. Disc Type
2. Servo Control
3. Track/Layer Jump
4. Manual Adjustment
5. Auto Adjustment
6. Memory Check

0. Disc Check Memory

                        Exit: RETURN
```

In using the Manual Operation menu, take care of the following points. These commands do not provide protection, thus requiring correct operation. The sector address or time code field is displayed when a disc is loaded.

1. Set correctly the disc type to be used on the Disc Type setting screen.
   The Disc Type setting must be performed after a disc was loaded.
   The set Disc Type is cleared when the tray is opened.
2. After power ON, if the Manual Operation was selected, first perform "Reset SLED TILT" by opening 1. Disc Type screen.
3. In case of an alarm, immediately press the [■] button to stop the servo operation, and turn the power OFF.

Basic operation (controllable from front panel or remote commander)

[POWER] : Power OFF
[■] : Servo stop
[⏏] (Open/Close) : Stop+Eject/Loading
[↩] : Return to Operation Menu or Test Mode Menu
[▶▶|], [|◀◀] : Transition between sub modes of menu
[1] to [9], [0] : Selection of menu and items
Cursor [↑]/[↓] : Increase/Decrease in manually adjusted value

0. Disc Check Memory

```
            Disc Check


1. SL Disc Check
2. CD Disc Check
3. DL Disc Check



0. Reset SLED TILT
```

On this screen, the mirror time is measured and written to the EEPROM to check the disc type. First, set a DVD SL disc and press [1], then set a CD disc and press [2], and finally set a DVD DL disc and press [3]. The measured mirror time is displayed respectively.
The adjustment must be executed more than once after default data were written.
From this screen, you can go to another mode by pressing [▶▶|] or [|◀◀] key, but you cannot enter this mode from another mode. You can enter this mode from the Operation Menu screen only.

1. Disc Type

```
            Disc Type
1. Disc Type Auto Check
2. DVD SL     12cm
3. DVD DL     12cm
4. CD         12cm
5. SACD       12cm
6. DVD SL     8cm
7. DVD DL     8cm
8. CD         8cm
9. LCD        8cm
0. Reset SLED TILT
                              EMG. 00
```

On this screen, select the disc type. To select the disc type, press the number of the loaded disc. The selected disc type is displayed at the bottom. Selecting [1] automatically selects and displays the disc type. In case of wrong display, retry "Disc Check Memory". Also, opening the tray causes the set disc type to be cleared. In this case, set the disc type again after loading.
In performing manual operation, the disc type must be set.

Once the disc type has been selected, the sector address or time code display field will appear as shown below. These values are displayed when PLL is locked.

```
            Disc Type
1. Disc Type Auto Check
2. DVD SL     12cm
3. DVD DL     12cm
4. CD         12cm
5. SACD       12cm
6. DVD SL     8cm
7. DVD DL     8cm
8. CD         8cm
9. LCD        8cm
0. Reset SLED TILT
            SA.———— SI.— EMG.00
DVD SL 12cm
```

Display when DVD SL 12cm disc was selected

```
            Disc Type
1. Disc Type Auto Check
2. DVD SL     12cm
3. DVD DL     12cm
4. CD         12cm
5. SACD       12cm
6. DVD SL     8cm
7. DVD DL     8cm
8. CD         8cm
9. LCD        8cm
0. Reset SLED TILT
              TC. —:—:— EMG.00
CD      12cm
```

Display when CD 12cm disc was selected

[0] Reset SLED TILT: Reset the Sled and Tilt to initial position. (Reset the Sled only to initial position because the Tilt mechanism is not available in this model.)

[1] Disc Type Check: Judge automatically the loaded disc. As the judged result is displayed at the bottom of screen, make sure that it is correct. If Disc Check Memory menu has not been executed after EEPROM default setting, the disc type cannot be judged. In this case, return to the initial menu and make a check for three types of discs (SL, DL, CD).

[2] to [9]: Select the loaded disc. The adjusted value is written to the address of selected disc. No further entry is necessary if [1] was selected.

2. Servo Control

```
          Servo Control
1. LD         Off   R. Sled FWD
2. SP         Off   L. Sled REV
3. Focus      Off
4. TRK.       Off
5. Sled       Off
6. CLVA       Off
7. FCS. Srch  Off


0. Reset SLED TILT
            SA.———— SI.— EMG.00
DVD SL 12cm
```

On this screen, the servo on/off control necessary for replay is executed. Normally, turn on each servo from 1 sequentially and when CLVA is turned on, the usual trace mode becomes active. In the trace mode, DVD sector address or CD time code is displayed. This is not displayed where the spindle is not locked.
The spindle could run overriding the control if the spindle system is faulty or RF is not present. In such a case, do not operate CLVA.

[0] Reset SLED TILT: Reset the Sled and Tilt to initial position. (Reset the Sled only to initial position because the Tilt mechanism is not available in this model.)

[1] LD: Turn ON/OFF the laser.

[2] SP: Turn ON/OFF the spindle.

[3] Focus: Search the focus and turn on the focus.

[4] TRK.: Turn ON/OFF the tracking servo.

[5] Sled: Turn ON/OFF the sled servo. When PLL is not locked (cannot be locked), the sled servo is not turned ON. The display keeps ON.)

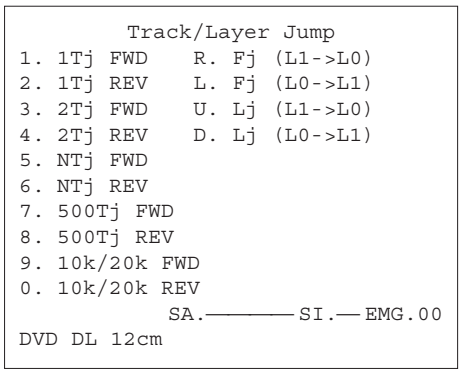
[6] CLVA: Turn ON/OFF normal servo of spindle servo.

[7] FCS. Srch: Apply same voltage as that of focus search to the focus drive to check the focus drive system.

[→] Sled FWD: Move the sled outward. Perform this operation with the tracking servo turned off.

[←] Sled REV: Move the sled inward. Perform this operation with the tracking servo turned off.

3. Track/Layer Jump



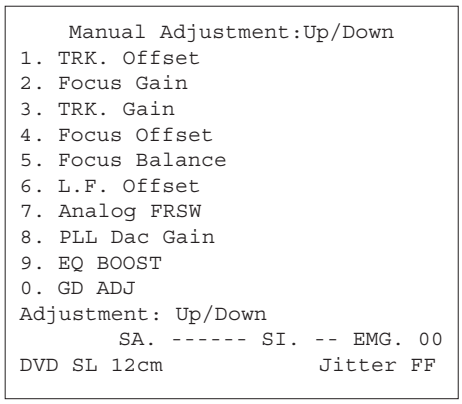
On this screen, track jump, etc. can be performed. Only for the DVD-DL, the focus jump and layer jump are displayed in the right field.

[1] 1Tj FWD: 1-track jump forward.
[2] 1Tj REV: 1-track jump reverse.
[3] 2Tj FWD: 2-track jump forward.
[4] 2Tj REV: 2-track jump reverse.
[5] NTj FWD: N-track jump forward.
[6] NTj REV: N-track jump reverse.
[7] 500Tj FWD: Fine search forward.
[8] 500Tj REV: Fine search reverse.
[9] 10k/20k FWD: Direct search forward.
[0] 10k/20k REV: Direct search reverse.

– The following commands are valid for DVD-DL disc only –

[→] (L1 ⟶ L0): Focus jump (Trk/Sled Servo OFF) forward.
[←] (L0 ⟶ L1): Focus jump (Trk/Sled Servo OFF) reverse.
[↑] (L1 ⟶ L0): Layer jump (Trk/Sled Servo ON) forward.
[↓] (L0 ⟶ L1): Layer jump (Trk/Sled Servo ON) reverse.

4. Manual Adjustment



On this screen, each item can be adjusted manually. Select the desired number [1] to [0] from the remote commander, and current setting for the selected item will be displayed, then increase or decrease numeric value with [↑] key or [↓] key. This value is stored in the EEPROM. If CLV has been applied, the jitter is displayed for reference for the adjustment.

[1] TRK. Offset: Adjusts tracking offset.
[2] Focus Gain: Adjusts focus gain.
[3] TRK. Gain: Adjusts track gain.
[4] Focus Offset: Adjusts focus offset.
[5] Focus Balance: Adjusts focus balance.
[6] L.F. Offset: Adjusts loop filter offset.
[7] Analog FRSW: Sets select switch of analog feedback circuit.
[8] PLL Dac Gain: Adjusts D/A converter gain of PLL.
[9] EQ BOOST: Adjusts boost amount of equalizer.
[0] GD ADJ: Adjusts group delay amount.

5. Auto Adjustment

```
         Auto Adjustment
1. Auto TRK. Offset
2. Auto Focus Balance
3. Auto Focus Offset
4. Auto Focus Gain
5. Auto TRK. Gain
6. Auto EQ.
7. Auto L.F. Offset
8. Auto Group Delay

          SA.04EF905 SI.00 EMG.00
DVD SL 12cm
```

On this screen, each item can be adjusted automatically. Select the desired number [1] to [8] from the remote commander, and selected item is adjusted automatically.

[1] Auto TRK. Offset: Adjusts tracking offset.
[2] Auto Focus Balance: Adjusts focus balance.
[3] Auto Focus Offset: Adjusts focus offset.
[4] Auto Focus Gain: Adjusts focus gain.
[5] Auto TRK. Gain: Adjusts track gain.
[6] Auto EQ
[7] Auto L.F. Offset: Adjusts loop filter offset.
[8] Auto Group Delay

6. Memory Check

The display image is shown below and three screens in total can be selected.

```
EEPROM DATA 1              —DL —
              CD  LCD SL  L0  L1
Focus Gain    xx  xx  xx  xx  xx
TRK. Gain     xx  xx  xx  xx  xx
FCS Balnce    xx  xx  xx  xx  xx
Focus Bias    xx  xx  xx  xx  xx
TRV Offset    xx  xx  xx  xx  xx
L.F. Offset   xx  xx  xx  xx  xx
EQ. Boost     xx  xx  xx  xx  xx
_
UP    : Last Data
DOWN  : Next Data
CLEAR : Default Set       page.1/3
```

```
EEPROM DATA 2              —DL —
              CD  LCD SL  L0  L1
RF Jitter     xx  --  xx  xx  xx
RF Level      xx  --  xx  --  --
FE Level      xx  --  xx  --  --
FE Balance    xx  --  xx  --  --
TRV.Level     xx  --  xx  --  --
TE Gain       xx  xx  --  --  --
PI Level      xx  --  xx  xx  --
_
UP    : PREV Data
DOWN  : Next Data
CLEAR : Default Set       page.2/3
```

```
EEPROM DATA 3              —DL —
              CD  LCD SL    L0  L1
Analog FRSW   xx  xx  xx    xx  xx
PLL Dac Gain  xx  xx  xx    xx  xx
Mirror Time   xx  xx  xx    xx  xx

_  THR A&L    xx  xx  xx/xx xx  xx
UP    : PREV Data
DOWN  : First Data
CLEAR : Default Set       page.3/3
```

On this screen, current servo adjusted data stored in the EEPROM are displayed. The adjusted data are initialized by pressing the [CLEAR] key, but be careful that they are not recoverable after initialization.
Before clearing the adjusted data, make a note of the set data. This screen will also appear if [0] All is selected in the Drive Auto Adjustment. In this case, default setting cannot be made.
"THR A&L" data on the second page cannot be changed if default setting is once made.

6-6. MECHA AGING

```
       ### Mecha Aging ###



Press OPEN key



Abort : STOP key
```

On the Test Mode Menu screen, selecting [3] executes the aging of mechanism. First, load a disc. Press the [▷] key, and the aging will start. During aging, the number of the repeat cycle is displayed. Aging can be aborted at any time by pressing the [■] key. After the operation has stopped, unload the disc and press again the [■] key or the [⏏] key to return to the Test Mode Menu.

6-7. EMERGENCY HISTORY

```
       ### EMG. History ###

Laser Hours   CD   xxhxxm
              DVD  xxhxxm

 1.  00 00 00 00   00 00 00 00
     00 00 00 00   00 00 00 00

 2.  00 00 00 00   00 00 00 00
     00 00 00 00   00 00 00 00

Select : 1-9      Scroll :UP/DOWN
(1: Last EMG.)    Exit   :RETURN
```

On the Test Mode Menu screen, selecting [4] displays the information such as servo emergency history. The history information from last "1" up to "10" can be scrolled with [↑] key or [↓] key. Also, specific information can be displayed by directly entering that number with the ten-key pad from [1] to [9].
(Emergency history code is shown separately.)
The upper two lines display the laser ON total hours. Data below minutes are omitted.

Clearing History Information

◎ Clearing laser hours
Press [DISPLAY] and [CLEAR] keys in this order.
Both CD and DVD data are cleared.

◎ Clearing emergency history
Press [TOP MENU] and [CLEAR] keys in this order.

◎ Initializing setup data
Press [TOP MENU] and [CLEAR] keys in this order.
The data have been initialized when "Set Up Initialized" message is displayed.
The EMG. History display screen will be restored soon.

6-8. VERSION INFORMATION

```
   ### Version Infomation ###

IF con.       Ver.x.xxx(xxxx)
              Group   xx

SYScon.       Ver.x.xxx(xxxx)
              Model   xx
              Region  0x

 Servo DSP Ver:x.xxx
 AVD ucode Ver:xxxxxxxx
 OPT TYPE : x LASER
Exit : RETURN
```

The ROM version, region code, OPT type, etc. are displayed if [5] is selected in the Test Mode Menu. The parenthesized hexadecimal number in the version number field indicates the checksum value of the ROM.

∗ Note after Downloading
After downloading ROM data, sometimes it happens that checksum is not the same as that of ROM data that has been downloaded.
In such a case, go back to the menu screen and select "0. Syscon Diagnosis", then select "1. All" in "2. Version". If the result of this operation does not give an agreement, it must be either Download error or ROM error.

6-9. VIDEO LEVEL ADJUSTMENT

On the Test Mode Menu screen, selecting [6] displays color bars for video level adjustment. During display of color bars, OSD disappears but the menu screen will be restored if pressing any key.

6-10. IF CON SELF DIAGNOSTIC FUNCTION

You can check functions of the buttons using the self-diagnostics function of IFcon as follows.

The self-diagnostics mode of IFcon is different from the normal operation in the following points.

1. Power supply voltage monitoring at power-on is stopped.
2. Communication monitor timer with SYScon is stopped.
3. The LED control in the display window is changed to be used for checking the button functions.

How to enter the self-diagnostics mode

During the STANDBY mode, while pressing the STOP button of the main unit, press the Remote Control Return -> Screen Display.

The POWER LED lights in green and the LED (blue) in the display window lights.

Now you are ready to starting checking the functions of the buttons.

How to check the functions of the buttons.

Whenever any buttons of the main unit except the POWER button is pressed, the LED in the display window repeats turning off and flashing.

When only the PAUSE button is pressed for one second and longer, operation of the LED changes as follows. Lights → turns off (or turns off → lights).

The input voltage range that is judged by the IFcon is shown below.

Input voltage of the buttons

Input voltage [V]	IC701 pin number (signal name)		
	Pin-34 (SW1)	Pin-35 (SW2)	Pin-37 (SW4)
0 to 1.10	POWER	EJECT	STOP
2.14 to 2.89	–	PLAY	PAUSE

How to exit the self-diagnostics mode

Press the POWER button of the main unit to exit the self-diagnostics mode and enter the STANDBY mode. If the unit does not enter the STANDBY mode, press the POWER of the Remote Control while pressing the STOP button of the main unit.

SECTION 7
ELECTRICAL ADJUSTMENT

In making adjustment, refer to 7-3. Adjustment Related Parts Arrangement.

This section describes procedures and instructions necessary for adjusting electrical circuits in this unit.

Instruments required:

1) Color monitor TV
2) Oscilloscope 1 or 2 phenomena, band width over 100 MHz, with delay mode
3) Frequency counter (over 8 digits)
4) Digital voltmeter
5) Standard commander (RMT-D151A/D151E)
6) DVD reference disc
   HLX-501 (J-6090-071-A) (dual layer)
   HLX-503 (J-6090-069-A) (single layer)
   HLX-504 (J-6090-088-A) (single layer)
   HLX-505 (J-6090-089-A) (dual layer)
7) SACD reference disc
   HLXA-509 (J-6090-090-A)
8) Extension Cable (J-6090-107-A)

7-1. POWER SUPPLY CHECK

ZSSR216GA (US,Canadian,Mexico)
ZSSR216HA (Except: US,Canadian,Mexico)

Mode	E-E
Instrument	Digital voltmeter
SW +1.8 V Check	
Test point	CN201 pin ⑮
Specification	1.8 $^{+0.1}_{-0.15}$ Vdc
SW +3.3 V Check	
Test point	CN201 pin ⑧
Specification	3.4 ± 0.2 Vdc
SW +5 V Check	
Test point	CN201 pin ⑭
Specification	5.0 ± 0.2 Vdc
EVER +5 V Check	
Test point	CN201 pin ⑫
Specification	5.0 ± 0.2 Vdc
SW +11 V (M) Check	
Test point	CN201 pin ⑥,⑦
Specification	11.0 ± 1.0 Vdc
SW +11 V (AU) Check	
Test point	CN201 pin ⑨
Specification	11.0 ± 1.0 Vdc
SW –8 V Check	
Test point	CN201 pin ③
Specification	–8.3 ± 0.8 Vdc

Checking method:

1) Confirm that each voltage satisfies the specification.

7-2. ADJUSTMENT OF VIDEO SYSTEM

1. Video Level Adjustment (MB-106 BOARD)

<Purpose>

This adjustment is made to satisfy the NTSC standard, and if not adjusted correctly, the brightness will be too large or too small.

Mode	Video level adjustment in test mode
Signal	Color bars
Test point	LINE OUT (VIDEO) connector (75 Ω terminated)
Instrument	Oscilloscope
Adjusting element	RV402
Specification	$1.0\ ^{+0.04}_{-0.02}$ Vp-p

Adjusting method:

1) In the test mode initial menu "6" Video Level Adjustment, set so that color bars are generated.
2) Adjust the RV402 to attain $1.0^{+0.04}_{-0.02}$ Vp-p.

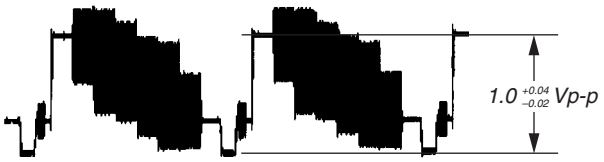


Fig.7-1.

2. Checking S Video Output S-Y

<Purpose>

Check S-terminal video output. If it is incorrect, pictures will not be displayed correctly in spite of connection to the TV with a S-terminal cable.

Mode	Video level adjustment in test mode
Signal	Color bars
Test point	S VIDEO OUT (S-Y) connector (75 Ω terminated)
Instrument	Oscilloscope
Specification	1.0 ± 0.05 Vp-p

Checking method:

1) In the test mode initial menu "6" Video Level Adjustment, set so that color bars are generated.
2) Confirm that the S-Y level is 1.0 ± 0.05 Vp-p.

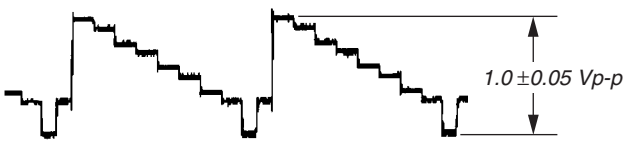


Fig. 7-2.

3. Checking S Video Output S-C

<Purpose>

This checks whether the S video output S-C satisfies the NTSC standard. If it is not correct, the colors will be too dark or too light.

Mode	Video level adjustment in test mode
Signal	Color bars
Test point	S VIDEO OUT (S-C) connector (75 Ω terminated)
Instrument	Oscilloscope
Specification	286 ± 30 mVp-p

Checking method:

1) In the test mode initial menu "6" Video Level Adjustment, set so that color bars are generated.
2) Confirm that the S-C burst is 286 ± 30 mVp-p

Fig. 7-3.

4. Checking Component Video Output Y

<Purpose>

This checks component video output Y. If it is incorrect, correct brightness will not be attained when connected to, for instance, projector.

Mode	Video level adjustment in test mode
Signal	Color bars
Test point	COMPONENT VIDEO OUT (Y) connector, D1 VIDEO OUT connector, Pin ① (75 Ω terminated)
Instrument	Oscilloscope
Specification	1.0 ± 0.05 Vp-p

Checking method:

1) In the test mode initial menu "6" Video Level Adjustment, set so that color bars are generated.
2) Confirm that the Y level is 1.0 ± 0.05 Vp-p.

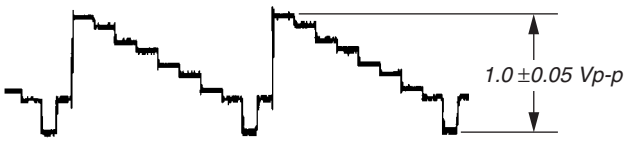


Fig. 7-4.

5. Checking Component Video Output B-Y

<Purpose>

This checks component video output B-Y. If it is incorrect, correct color will not be displayed when connected to, for instance, component input projector.

Mode	Video level adjustment in test mode
Signal	Color bars
Test point	COMPONENT VIDEO OUT (CB) connector, D1 VIDEO OUT connector, Pin ③ (75 Ω terminated)
Instrument	Oscilloscope
Specification	A= 700 ± 50 mVp-p (others) 646 ± 50 mVp-p (For US, Canada, Argentina, Mexico)

Checking method:

1) In the test mode initial menu “6” Video Level Adjustment, set so that color bars are generated.
2) Confirm that the B-Y level is A.

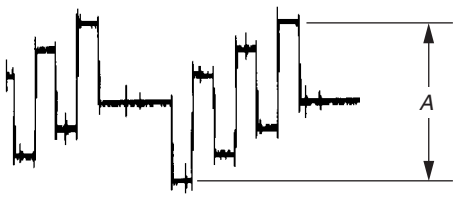


Fig. 7-5.

6. Checking Component Video Output R-Y

<Purpose>

This checks component video output R-Y. If it is incorrect, correct color will not be displayed when connected to, for instance, component input projector.

Mode	Video level adjustment in test mode
Signal	Color bars
Test point	COMPONENT VIDEO OUT (CR) connector, D1 VIDEO OUT connector. Pin ⑤ (75 Ω terminated)
Instrument	Oscilloscope
Specification	B= 700 ± 50 mVp-p (others) 646 ± 50 mVp-p (For US, Canada, Argentina, Mexico)

Checking method:

1) In the test mode initial menu “6” Video Level Adjustment, set so that color bars are generated.
2) Confirm that the R-Y level is B.

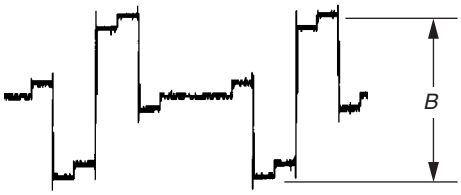
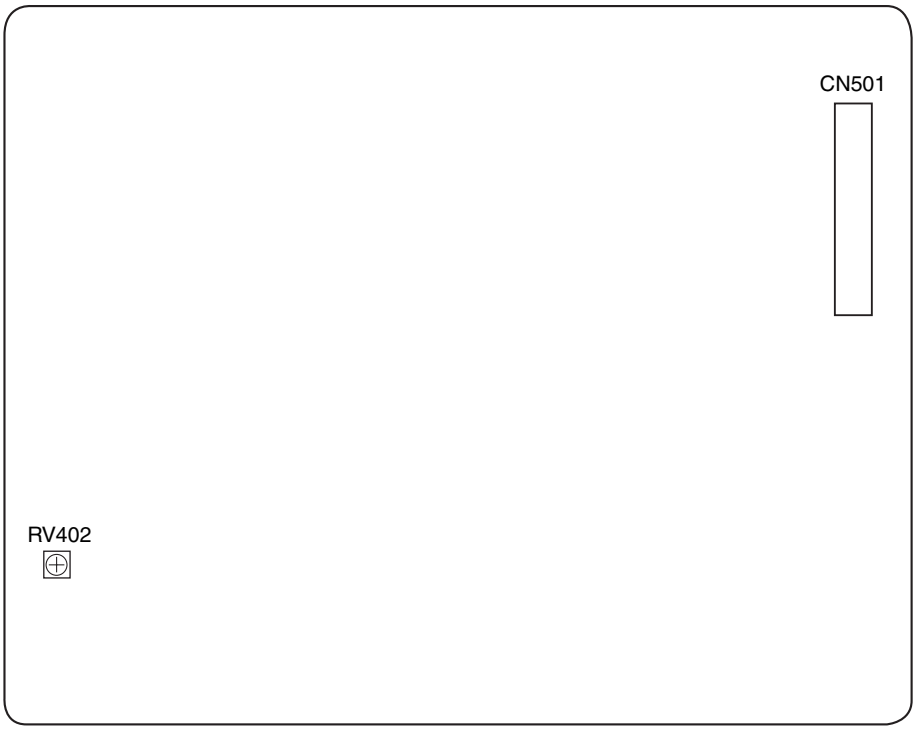


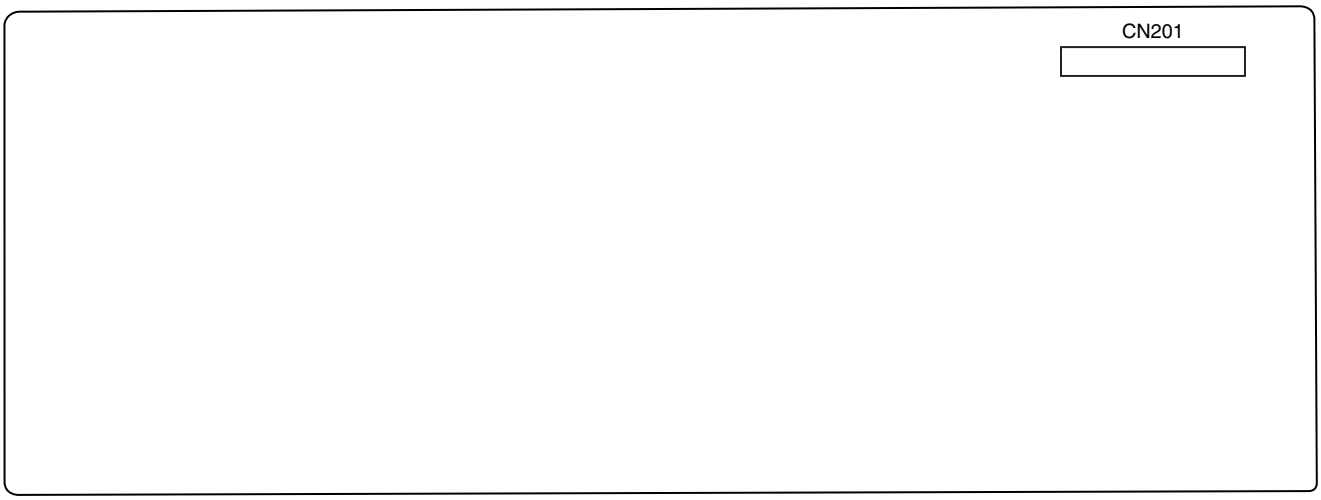
Fig. 7-6.

7-3. ADJUSTMENT RELATED PARTS ARRANGEMENT

MB-106 BOARD (Side A)



POWER BOARD (Side A)



SECTION 8
REPAIR PARTS LIST

8-1. EXPLODED VIEWS

NOTE:

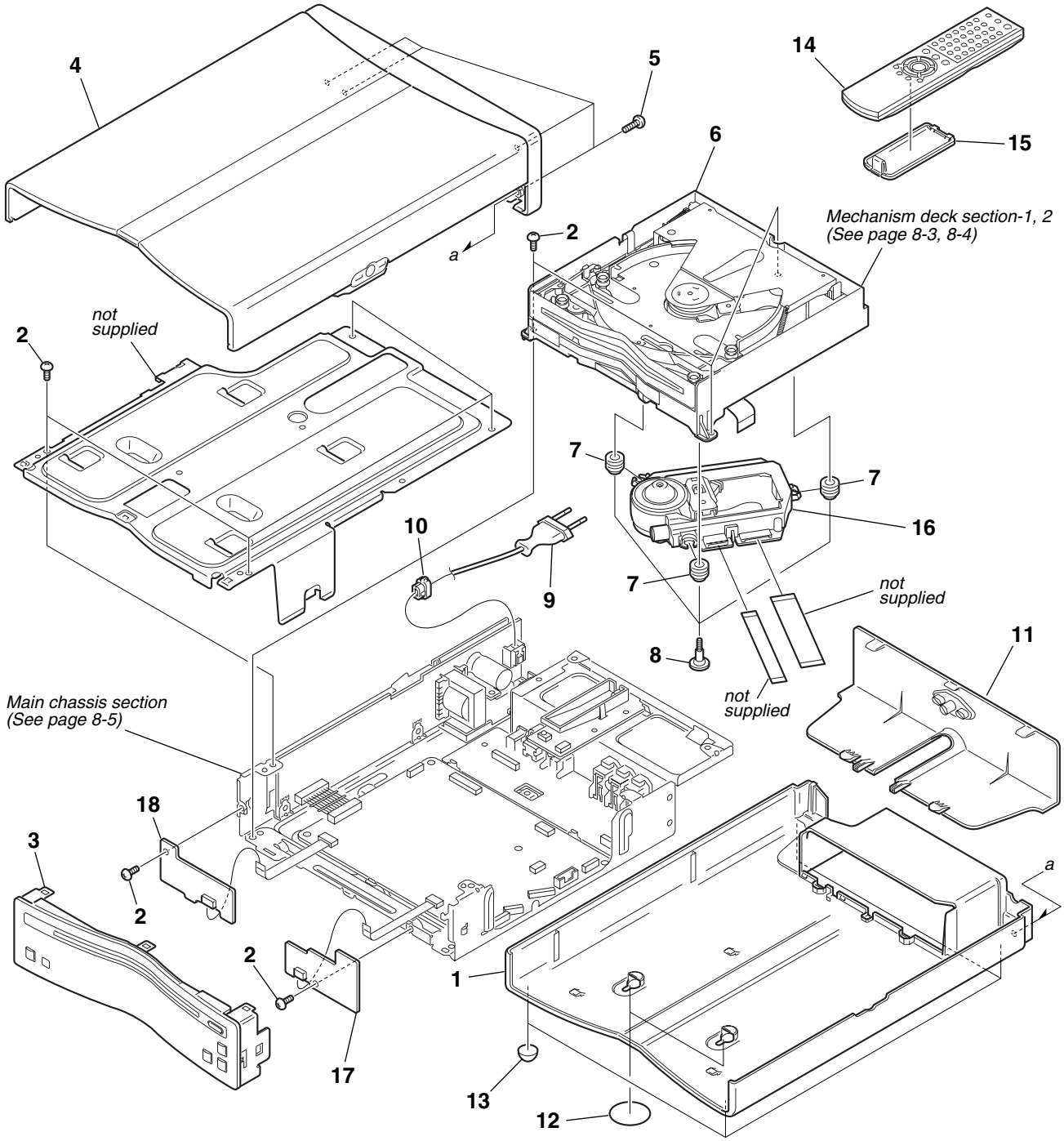
- -XX, -X mean standardized parts, so they may have some differences from the original one.
- Items marked "*" are not stocked since they are seldom required for routine service. Some delay should be anticipated when ordering these items.
- The mechanical parts with no reference number in the exploded views are not supplied.

- Abbreviation
  CND : Canadian model
  AUS : Australian model
  NZ : New Zealand model
  HK : Hong Kong model
  MX : Mexico model
  SP : Singapore model
  : Malaysia model
  : Thailand model
  : Philippines model
  : Indonesia model
  : Vietnum model
  AR : Argentina model
  : Chilean model
  : Peruvian model

The components identified by mark ⚠or dotted line with mark ⚠ are critical for safety.
Replace only with part number specified.

Les composants identifiés par une marque ⚠ sont critiques pour la sécurité.
Ne les remplacer que par une pièce portant le numéro spécifié.

8-1-1. OVERALL SECTION



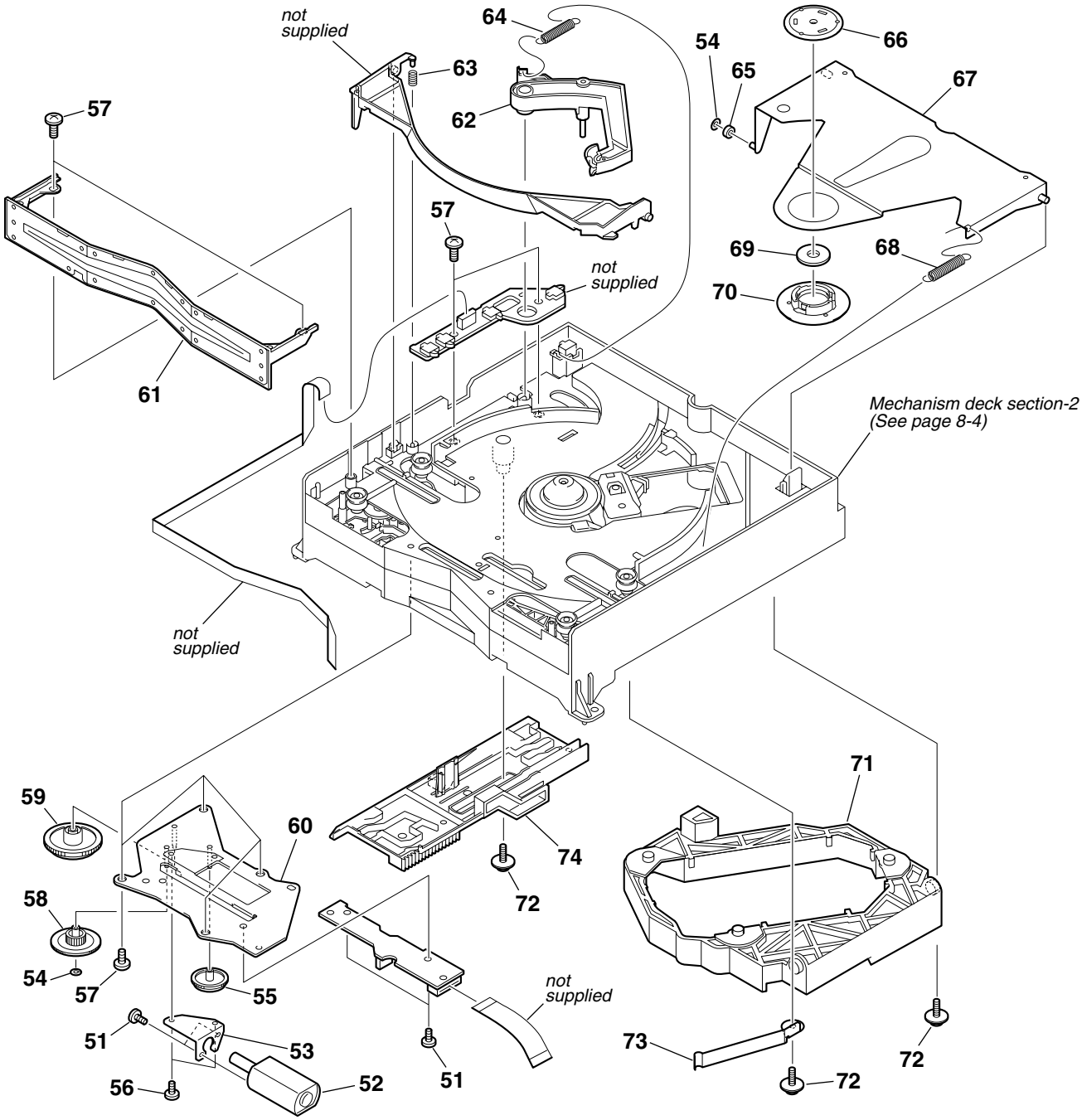
Ref. No.	Part No.	Description	Remarks
1	3-077-373-21	CASE, LOWER (US,CND)	
1	3-077-373-31	CASE, LOWER (AEP,UK,AUS,NZ,HK,SP)	
1	3-077-373-41	CASE, LOWER (AR,MX)	
2	3-970-608-01	SUMITITE (B3), +BV	
3	X-3952-726-1	PANEL ASSY, CONTROL	
4	X-3952-728-1	CASE, UPPER ASSY	
5	3-970-608-51	SUMITITE (B3), +BV	
6	A-6061-118-A	MD ASSY	
7	3-057-023-01	INSULATOR (RB)	
8	3-067-344-01	INSULATOR SCREW	
⚠9	1-757-140-11	CORD, POWER (2P)(AR,AEP,SP)	
⚠9	1-823-597-11	CORD, POWER (2P)(MX,US,CND)	
⚠9	1-824-535-11	CORD, POWER (3P)(UK,AUS,NZ,HK)	
⚠10	4-966-267-12	BUSHING (FBS001), CORD	

Ref. No.	Part No.	Description	Remarks
11	X-3952-790-1	COVER (LOWER) ASSY, TERMINAL	
12	3-070-489-01	LABEL, PATCH	
13	3-077-427-01	FOOT	
14	1-477-326-11	REMOTE COMMANDER (RMT-D151A)	(MX,US,CND)
14	1-477-326-31	REMOTE COMMANDER (RMT-D151E)	(AEP,UK,AR,AUS,NZ,HK,SP)
15	3-072-138-11	COVER (SANWA), BATTERY	
⚠16	A-6062-709-A	KHM-270AAA SERVICE ASSY	
17	A-6065-802-A	SW-377 BOARD, COMPLETE	
18	A-6065-801-A	IF-96 BOARD, COMPLETE	

Note :
The components identified by mark ⚠ or dotted line with mark ⚠ are critical for safety.
Replace only with part number specified.

Note :
Les composants identifiés par une marque ⚠ sont critiques pour la sécurité.
Ne les remplacer que par une pièce portant le numéro spécifié.

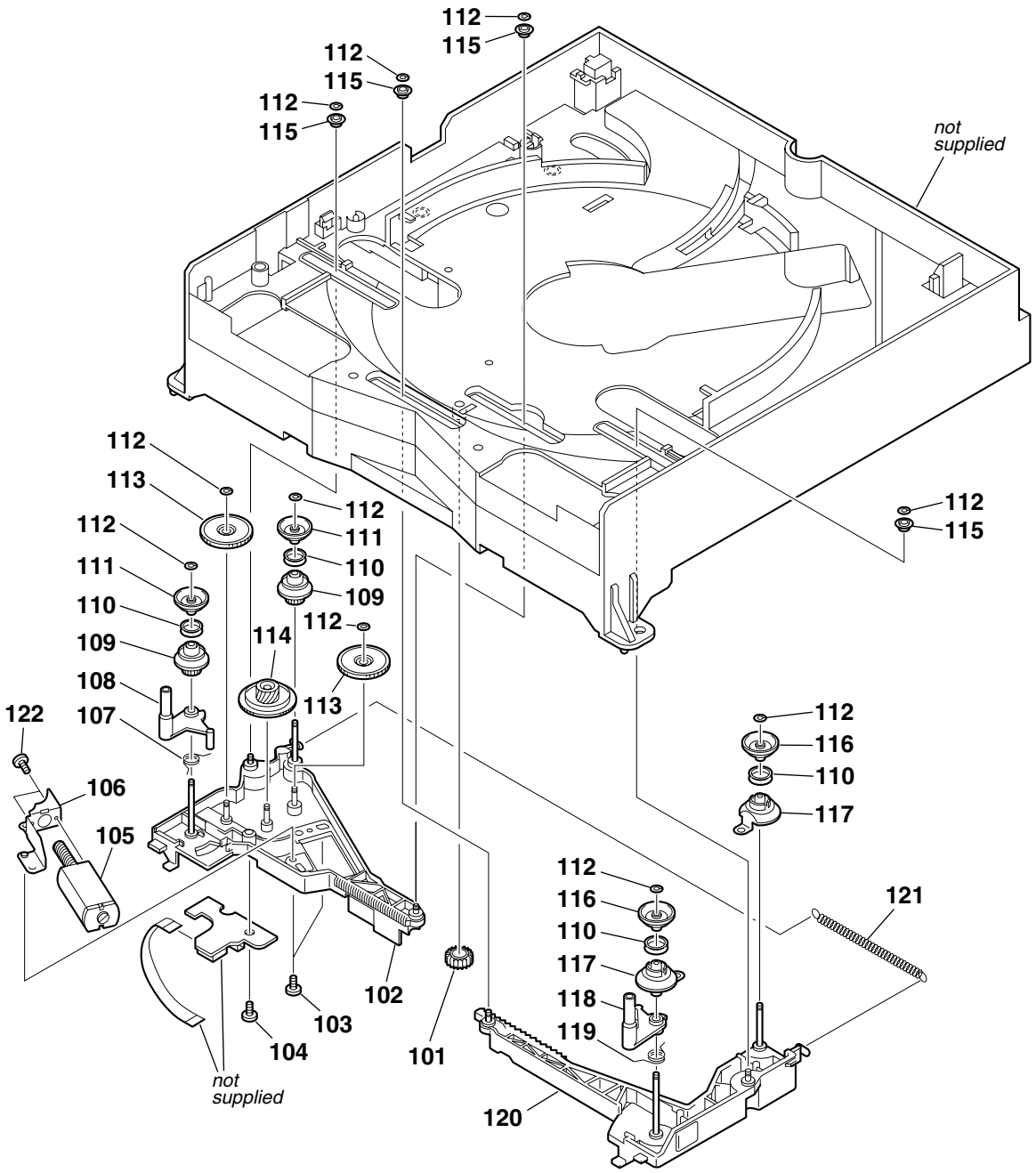
8-1-2. MECHANISM DECK SECTION-1



Ref. No.	Part No.	Description	Remarks
51	7-627-554-58	SCREW +P 2X2.8	
52	X-3951-914-1	MOTOR (C) ASSY	
53	3-070-576-01	BRACKET (C), MOTOR	
54	3-727-176-01	WASHER, STOPPER	
55	3-070-573-01	WHEEL (C), WORM	
56	7-627-554-37	SCREW,PRECISION +P 2X1.8 TYPE1	
57	7-685-533-19	SCREW +BTP 2.6X6 TYPE2 N-S	
58	3-070-574-01	GEAR (C1)	
59	3-070-575-01	GEAR (C2)	
60	X-3951-911-1	BASE (C) ASSY	
61	X-3951-919-1	GATE ASSY	
62	X-3952-852-1	LEVER 2 ASSY	

Ref. No.	Part No.	Description	Remarks
63	3-070-596-01	SPRING, COMPRESSION	
64	3-070-587-01	SPRING, EXTENSION	
65	3-070-583-01	ROLLER (HP)	
66	3-070-592-01	YOKE HOLDER	
67	X-3951-918-1	ARM ASSY, CHUCKING	
68	3-070-595-01	SPRING, EXTENSION	
69	3-070-591-01	YOKE	
70	3-070-590-01	CHUCK PULLEY	
71	3-070-579-11	HOLDER, BU	
72	4-933-134-41	SCREW (+PTPWH 2.6X5)	
73	3-070-585-01	SPRING (SLIDER)	
74	3-070-577-01	RACK (L)	

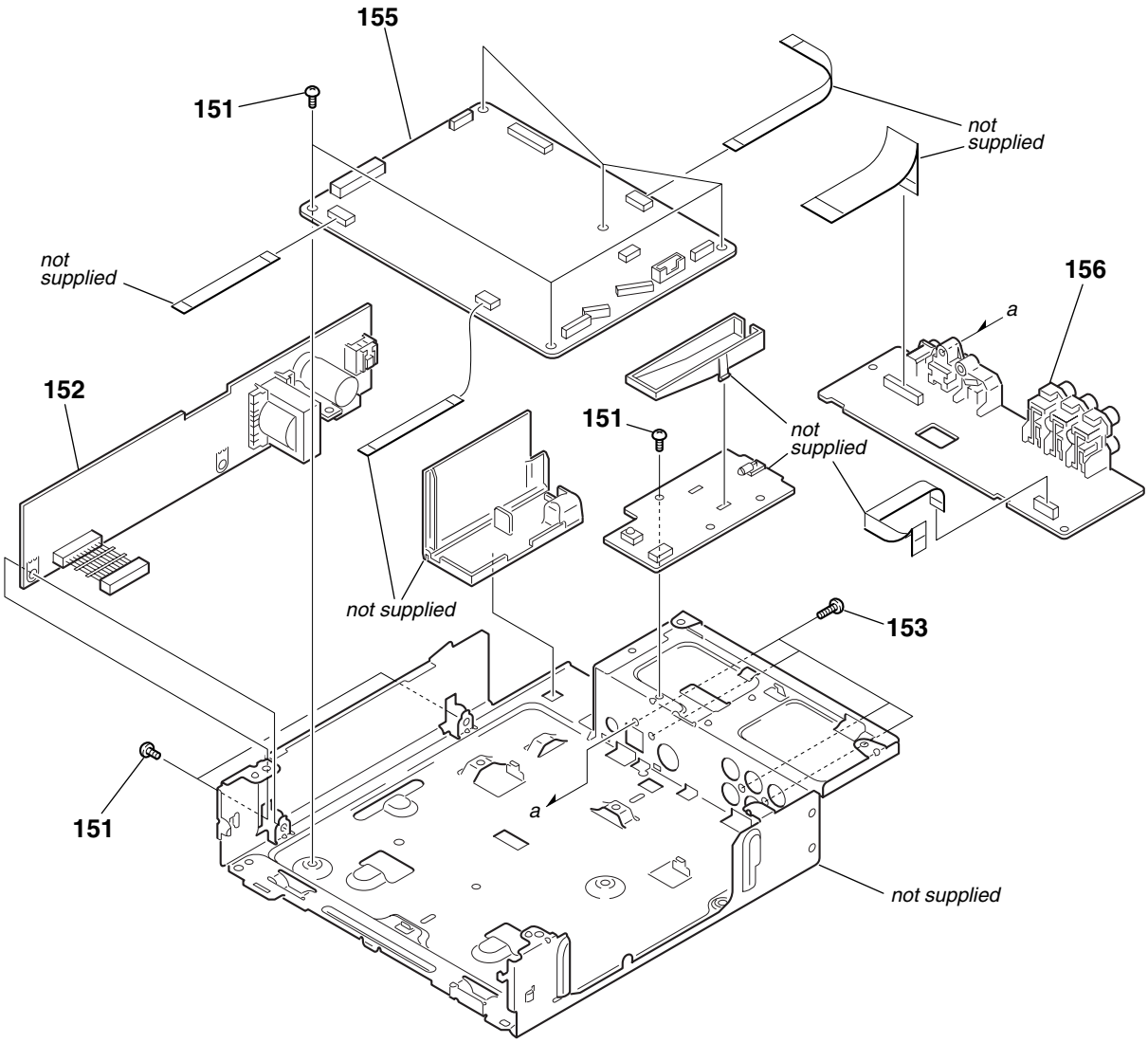
8-1-3. MECHANISM DECK SECTION-2



Ref. No.	Part No.	Description	Remarks
101	3-070-554-01	GEAR (P)	
102	X-3952-705-1	SLIDER (L) ASSY	
103	3-968-729-81	SCREW (2X3)	
104	7-685-104-19	SCREW +P 2X6 TYPE2 NON-SLIT	
105	X-3951-915-1	MOTOR (R) ASSY	
106	3-070-568-01	BRACKET (R), MOTOR	
107	3-070-594-01	SPRING (L), TORSION	
108	X-3951-917-3	STOPPER (L) ASSY	
109	3-070-555-01	ROLLER	
110	3-070-557-01	RUBBER, ROLLER	
111	3-070-556-01	CAP	

Ref. No.	Part No.	Description	Remarks
112	3-727-176-01	WASHER, STOPPER	
113	3-070-567-01	GEAR (R)	
114	3-070-566-01	WHEEL (R), WORM	
115	3-070-569-01	ROLLER (SLIDER)	
116	3-077-279-01	CAP 2, S	
117	3-077-278-01	ROLLER 2, S	
118	X-3951-916-2	STOPPER (R) ASSY	
119	3-070-593-01	SPRING (R), TORSION	
120	X-3952-704-1	SLIDER (R) ASSY	
121	3-070-582-01	SPRING, EXTENSION	
122	7-627-850-08	SCREW,PRECISION +P 1.4X2	

8-1-4. MAIN CHASSIS SECTION



Ref. No.	Part No.	Description	Remarks
151	3-970-608-01	SUMITITE (B3), +BV	
⚠152	1-468-701-11	POWER BLOCK (ZSSR216GA)(MX,US,CND)	
⚠152	1-468-702-11	POWER BLOCK (ZSSR216HA)	(AEP,UK,AR,AUS,NZ,HK,SP)
153	3-970-608-51	SUMITITE (B3), +BV	
155	A-6065-798-A	MB-106(UC) BOARD, COMPLETE (US,CND)	
155	A-6065-806-A	MB-106(MX) BOARD, COMPLETE (AR,MX)	
155	A-6065-807-A	MB-106(EC) BOARD, COMPLETE	(AEP,UK,AUS,NZ)
155	A-6065-809-A	MB-106(GA) BOARD, COMPLETE (HK,SP)	
156	A-6065-799-A	AV-68(UC) BOARD, COMPLETE	(AR,MX,US,CND)
156	A-6065-808-A	AV-68(EC) BOARD, COMPLETE	(AEP,UK,AUS,NZ)
156	A-6065-810-A	AV-68(GA) BOARD, COMPLETE (HK,SP)	

Note :	**Note :**
The components identified by mark ⚠ or dotted line with mark ⚠ are critical for safety. Replace only with part number specified.	Les composants identifiés par une marque ⚠ sont critiques pour la sécurité. Ne les remplacer que par une pièce portant le numéro spécifié.

8-2. ELECTRICAL PARTS LIST

NOTE:

- Due to standardization, replacements in the parts list may be different from the parts specified in the diagrams or the components used on the set.
- -XX, -X mean standardized parts, so they may have some difference from the original one.
- Items marked "*" are not stocked since they are seldom required for routine service. Some delay should be anticipated when ordering these items.
- CAPACITORS:
  uF: µF
- COILS
  uH: µH
- RESISTORS
  All resistors are in ohms.
  METAL: metal-film resistor
  METAL OXIDE: Metal Oxide-film resistor
  F: nonflammable
- SEMICONDUCTORS
  In each case, u: µ, for example:
  uA...: µA... , uPA... , µPA... ,
  uPB... , µPB... , uPC... , µPC... ,
  uPD..., µPD...
- Abbreviation
  CND : Canadian model
  AUS : Australian model
  NZ : New Zealand model
  HK : Hong Kong model
  MX : Mexico model
  SP : Singapore model
  : Malaysia model
  : Thailand model
  : Philippines model
  : Indonesia model
  : Vietnum model

When indicating parts by reference number, please include the board name.

The components identified by mark ⚠ or dotted line with mark ⚠ are critical for safety. Replace only with part number specified.

Les composants identifiés par une marque ⚠ sont critiques pour la sécurité.
Ne les remplacer que par une pièce portant le numéro spécifié.

AR : Argentina model
: Chilean model
: Peruvian model

Ref. No.	Part No.	Description				Remarks
	A-6065-799-A	AV-68(UC) BOARD, COMPLETE (AR,MX,US,CND)				
		**********				
	A-6065-808-A	AV-68(EC) BOARD, COMPLETE (AEP,UK,AUS,NZ)				
		**********				
	A-6065-810-A	AV-68(GA) BOARD, COMPLETE (HK,SP)				
		**********				
		< CAPACITOR >				
C607	1-162-964-11	CERAMIC CHIP	0.001uF	10%	50V	
C614	1-164-739-11	CERAMIC CHIP	560PF	5%	50V	
C615	1-164-739-11	CERAMIC CHIP	560PF	5%	50V	
C616	1-164-218-11	CERAMIC CHIP	180PF	0.25PF	50V	
C617	1-164-218-11	CERAMIC CHIP	180PF	0.25PF	50V	
C618	1-164-218-11	CERAMIC CHIP	180PF	0.25PF	50V	
C619	1-164-218-11	CERAMIC CHIP	180PF	0.25PF	50V	
C620	1-162-970-11	CERAMIC CHIP	0.01uF	10%	25V	
C621	1-162-970-11	CERAMIC CHIP	0.01uF	10%	25V	
C622	1-126-947-11	ELECT	47uF	20%	16V	
C623	1-126-947-11	ELECT	47uF	20%	16V	
C628	1-126-947-11	ELECT	47uF	20%	16V	
C629	1-164-230-11	CERAMIC CHIP	220PF	5%	50V	(AEP,UK,HK,SP)
C630	1-164-230-11	CERAMIC CHIP	220PF	5%	50V	(AEP,UK,HK,SP)
C633	1-162-970-11	CERAMIC CHIP	0.01uF	10%	25V	
C634	1-124-589-11	ELECT	47uF	20%	16V	
C635	1-126-947-11	ELECT	47uF	20%	16V	
C636	1-126-947-11	ELECT	47uF	20%	16V	
C637	1-127-715-91	CERAMIC CHIP	0.22uF	10%	16V	
C638	1-126-947-11	ELECT	47uF	20%	16V	
C639	1-107-826-11	CERAMIC CHIP	0.1uF	10%	16V	
C640	1-107-826-11	CERAMIC CHIP	0.1uF	10%	16V	
		< CONNECTOR >				
* CN603	1-770-641-11	CONNECTOR, FFC/FPC 10P				
CN604	1-770-648-11	CONNECTOR, FFC/FPC 20P				
		< DIODE >				
D605	8-719-071-15	DIODE HZM6.8ZWA1TL				
D606	8-719-071-15	DIODE HZM6.8ZWA1TL				
D607	8-719-071-15	DIODE HZM6.8ZWA1TL				
D608	8-719-071-15	DIODE HZM6.8ZWA1TL				
D609	8-719-071-15	DIODE HZM6.8ZWA1TL				
D610	8-719-067-59	DIODE MAZ9120D0LS0-TX/L				

Ref. No.	Part No.	Description				Remarks
		< FERRITE BEAD >				
FB601	1-414-553-11	FERRITE	0UH			
FB602	1-414-553-11	FERRITE	0UH			
		< IC >				
IC603	8-759-909-71	IC BA4558F-E2				
IC604	8-749-016-00	IC HVE0024				
IC605	8-759-662-86	IC NJM79M05DL1A(TE2)				
IC606	8-759-826-45	IC LA73050-TLM				
		< JACK >				
J602	1-794-198-11	CONNECTOR, S TERMINAL (S VIDEO OUT)				
J603	1-764-188-21	JACK (SMALL TYPE)(DIA. 3.5)(CONTROL S IN)				
		< JUMPER RESISTOR >				
JR601	1-216-296-11	SHORT CHIP	0			
JR602	1-216-296-11	SHORT CHIP	0			
JR603	1-216-295-91	SHORT CHIP	0			
JR604	1-216-295-91	SHORT CHIP	0			
JR605	1-216-296-11	SHORT CHIP	0			
JR606	1-216-296-11	SHORT CHIP	0			
JR607	1-216-296-11	SHORT CHIP	0			
JR608	1-216-296-11	SHORT CHIP	0			
JR609	1-216-296-11	SHORT CHIP	0			
JR610	1-216-295-91	SHORT CHIP	0			
		< COIL >				
L601	1-412-064-11	INDUCTOR	100uH			
		< TRANSISTOR >				
Q606	8-729-046-97	TRANSISTOR	2SD1938(F)-T(TX).SO			
Q607	8-729-046-97	TRANSISTOR	2SD1938(F)-T(TX).SO			
Q613	8-729-421-19	TRANSISTOR	UN2213-TX			
Q614	8-729-424-08	TRANSISTOR	UN2111-TX			
		< RESISTOR >				
R616	1-218-863-11	METAL CHIP	4.7K	0.5%	1/10W	
R617	1-218-863-11	METAL CHIP	4.7K	0.5%	1/10W	
R618	1-218-863-11	METAL CHIP	4.7K	0.5%	1/10W	
R619	1-218-863-11	METAL CHIP	4.7K	0.5%	1/10W	
R621	1-218-865-11	METAL CHIP	5.6K	0.5%	1/10W	

Ref. No.	Part No.	Description			Remarks
R622	1-218-865-11	METAL CHIP	5.6K	0.5%	1/10W
R623	1-216-825-11	METAL CHIP	2.2K	5%	1/16W
R626	1-216-825-11	METAL CHIP	2.2K	5%	1/16W
R627	1-216-825-11	METAL CHIP	2.2K	5%	1/16W
R628	1-218-865-11	METAL CHIP	5.6K	0.5%	1/10W
R629	1-216-825-11	METAL CHIP	2.2K	5%	1/16W
R630	1-218-865-11	METAL CHIP	5.6K	0.5%	1/10W
R631	1-216-817-11	METAL CHIP	470	5%	1/16W
R632	1-216-817-11	METAL CHIP	470	5%	1/16W
R633	1-216-841-11	METAL CHIP	47K	5%	1/16W
R634	1-216-841-11	METAL CHIP	47K	5%	1/16W
R641	1-216-829-11	METAL CHIP	4.7K	5%	1/16W (AEP,UK,AUS,NZ)
R642	1-216-829-11	METAL CHIP	4.7K	5%	1/16W (AR,HK,MX,SP,US,CND)
R643	1-216-829-11	METAL CHIP	4.7K	5%	1/16W
R646	1-216-845-11	METAL CHIP	100K	5%	1/16W (AEP,UK,AUS,NZ)
R647	1-216-845-11	METAL CHIP	100K	5%	1/16W
R648	1-216-817-11	METAL CHIP	470	5%	1/16W
R649	1-216-817-11	METAL CHIP	470	5%	1/16W
R652	1-208-782-11	METAL CHIP	1K	0.5%	1/10W
R656	1-216-833-11	METAL CHIP	10K	5%	1/16W
R660	1-216-807-11	METAL CHIP	68	5%	1/16W
R661	1-216-807-11	METAL CHIP	68	5%	1/16W
R662	1-216-807-11	METAL CHIP	68	5%	1/16W
R663	1-216-833-11	METAL CHIP	10K	5%	1/16W
R664	1-216-807-11	METAL CHIP	68	5%	1/16W
R665	1-216-807-11	METAL CHIP	68	5%	1/16W
R666	1-216-807-11	METAL CHIP	68	5%	1/16W

	A-6065-801-A	IF-96 BOARD, COMPLETE **********			
		< CAPACITOR >			
C102	1-162-970-11	CERAMIC CHIP	0.01uF	10%	25V
		< CONNECTOR >			
CN101	1-779-345-11	CONNECTOR, FFC/FPC 7P			
		< DIODE >			
D103	8-719-064-06	DIODE SML-020MVT-T87			
		< IC >			
IC101	6-600-098-01	IC GP1UM26SXK			
		< RESISTOR >			
R103	1-216-864-11	METAL CHIP	0	5%	1/16W
R104	1-216-821-11	METAL CHIP	1K	5%	1/16W
R105	1-216-817-11	METAL CHIP	470	5%	1/16W
		< SWITCH >			
S101	1-771-206-11	SWITCH, KEY BOARD (LED NON) (POWER)			

Ref. No.	Part No.	Description			Remarks
		IR-42(UC) COMPL **********			
	3-077-418-01	HOLDER, LED			
		< CAPACITOR >			
C1652	1-162-970-11	CERAMIC CHIP	0.01uF	10%	25V
		< CONNECTOR >			
CN1651	1-794-784-21	CONNECTOR, FFC/FPC 6P			
		< DIODE >			
D1651	8-719-076-64	DIODE LNG997CKB0S0			
		< IC >			
IC1651	6-600-098-01	IC GP1UM26SXK			
		< RESISTOR >			
R1652	1-216-864-11	METAL CHIP	0	5%	1/16W
R1655	1-216-813-11	METAL CHIP	220	5%	1/16W

	A-6065-798-A	MB-106(UC) BOARD, COMPLETE (US,CND) **********			
	A-6065-806-A	MB-106(MX) BOARD, COMPLETE (AR,MX) **********			
	A-6065-807-A	MB-106(EC) BOARD, COMPLETE (AEP,UK,AUS,NZ) **********			
	A-6065-809-A	MB-106(GA) BOARD, COMPLETE (HK,SP) **********			
		< CAPACITOR >			
C102	1-162-970-11	CERAMIC CHIP	0.01uF	10%	25V
C103	1-126-209-11	ELECT CHIP	100uF	20%	4V
C104	1-162-970-11	CERAMIC CHIP	0.01uF	10%	25V
C105	1-162-970-11	CERAMIC CHIP	0.01uF	10%	25V
C106	1-162-916-11	CERAMIC CHIP	12PF	5%	50V
C107	1-162-916-11	CERAMIC CHIP	12PF	5%	50V
C108	1-162-970-11	CERAMIC CHIP	0.01uF	10%	25V
C109	1-126-209-11	ELECT CHIP	100uF	20%	4V
C110	1-162-970-11	CERAMIC CHIP	0.01uF	10%	25V
C111	1-162-970-11	CERAMIC CHIP	0.01uF	10%	25V
C114	1-162-970-11	CERAMIC CHIP	0.01uF	10%	25V
C118	1-162-970-11	CERAMIC CHIP	0.01uF	10%	25V
C120	1-162-970-11	CERAMIC CHIP	0.01uF	10%	25V
C121	1-162-970-11	CERAMIC CHIP	0.01uF	10%	25V
C122	1-162-970-11	CERAMIC CHIP	0.01uF	10%	25V
C129	1-162-970-11	CERAMIC CHIP	0.01uF	10%	25V
C201	1-162-970-11	CERAMIC CHIP	0.01uF	10%	25V
C202	1-162-970-11	CERAMIC CHIP	0.01uF	10%	25V
C205	1-162-964-11	CERAMIC CHIP	0.001uF	10%	50V
C210	1-162-966-11	CERAMIC CHIP	0.0022uF	10%	50V
C211	1-162-966-11	CERAMIC CHIP	0.0022uF	10%	50V
C212	1-162-966-11	CERAMIC CHIP	0.0022uF	10%	50V
C213	1-162-966-11	CERAMIC CHIP	0.0022uF	10%	50V
C214	1-164-245-11	CERAMIC CHIP	0.015uF	10%	25V
C215	1-162-927-11	CERAMIC CHIP	100PF	5%	50V

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Ref. No.	Part No.	Description			Remarks
C216	1-164-230-11	CERAMIC CHIP	220PF	5%	50V
C218	1-162-965-11	CERAMIC CHIP	0.0015uF	10%	50V
C219	1-107-826-11	CERAMIC CHIP	0.1uF	10%	16V
C220	1-107-826-11	CERAMIC CHIP	0.1uF	10%	16V
C221	1-124-779-00	ELECT CHIP	10uF	20%	16V
C222	1-162-964-11	CERAMIC CHIP	0.001uF	10%	50V
C223	1-162-964-11	CERAMIC CHIP	0.001uF	10%	50V
C225	1-162-927-11	CERAMIC CHIP	100PF	5%	50V
C226	1-164-230-11	CERAMIC CHIP	220PF	5%	50V
C228	1-162-964-11	CERAMIC CHIP	0.001uF	10%	50V
C229	1-162-964-11	CERAMIC CHIP	0.001uF	10%	50V
C230	1-162-968-11	CERAMIC CHIP	0.0047uF	10%	50V
C231	1-162-964-11	CERAMIC CHIP	0.001uF	10%	50V
C232	1-162-968-11	CERAMIC CHIP	0.0047uF	10%	50V
C233	1-162-968-11	CERAMIC CHIP	0.0047uF	10%	50V
C234	1-126-205-11	ELECT CHIP	47uF	20%	6.3V
C235	1-162-970-11	CERAMIC CHIP	0.01uF	10%	25V
C236	1-164-739-11	CERAMIC CHIP	560PF	5%	50V
C238	1-124-779-00	ELECT CHIP	10uF	20%	16V
C240	1-164-677-11	CERAMIC CHIP	0.033uF	10%	16V
C241	1-107-826-11	CERAMIC CHIP	0.1uF	10%	16V
C242	1-126-205-11	ELECT CHIP	47uF	20%	6.3V
C243	1-162-970-11	CERAMIC CHIP	0.01uF	10%	25V
C244	1-107-826-11	CERAMIC CHIP	0.1uF	10%	16V
C245	1-162-970-11	CERAMIC CHIP	0.01uF	10%	25V
C246	1-164-677-11	CERAMIC CHIP	0.033uF	10%	16V
C247	1-162-970-11	CERAMIC CHIP	0.01uF	10%	25V
C248	1-162-970-11	CERAMIC CHIP	0.01uF	10%	25V
C249	1-162-970-11	CERAMIC CHIP	0.01uF	10%	25V
C250	1-162-970-11	CERAMIC CHIP	0.01uF	10%	25V
C251	1-107-826-11	CERAMIC CHIP	0.1uF	10%	16V
C252	1-107-826-11	CERAMIC CHIP	0.1uF	10%	16V
C253	1-162-964-11	CERAMIC CHIP	0.001uF	10%	50V
C254	1-162-970-11	CERAMIC CHIP	0.01uF	10%	25V
C255	1-107-826-11	CERAMIC CHIP	0.1uF	10%	16V
C256	1-165-176-11	CERAMIC CHIP	0.047uF	10%	16V
C257	1-165-176-11	CERAMIC CHIP	0.047uF	10%	16V
C258	1-162-970-11	CERAMIC CHIP	0.01uF	10%	25V
C259	1-162-964-11	CERAMIC CHIP	0.001uF	10%	50V
C260	1-162-970-11	CERAMIC CHIP	0.01uF	10%	25V
C261	1-162-959-11	CERAMIC CHIP	330PF	5%	50V
C262	1-107-826-11	CERAMIC CHIP	0.1uF	10%	16V
C263	1-124-779-00	ELECT CHIP	10uF	20%	16V
C264	1-162-970-11	CERAMIC CHIP	0.01uF	10%	25V
C265	1-107-826-11	CERAMIC CHIP	0.1uF	10%	16V
C266	1-162-970-11	CERAMIC CHIP	0.01uF	10%	25V
C270	1-162-970-11	CERAMIC CHIP	0.01uF	10%	25V
C271	1-126-204-11	ELECT CHIP	47uF	20%	16V
C272	1-107-826-11	CERAMIC CHIP	0.1uF	10%	16V
C273	1-107-826-11	CERAMIC CHIP	0.1uF	10%	16V
C276	1-162-964-11	CERAMIC CHIP	0.001uF	10%	50V
C278	1-107-826-11	CERAMIC CHIP	0.1uF	10%	16V
C279	1-162-970-11	CERAMIC CHIP	0.01uF	10%	25V
C304	1-162-970-11	CERAMIC CHIP	0.01uF	10%	25V
C305	1-162-968-11	CERAMIC CHIP	0.0047uF	10%	50V

Ref. No.	Part No.	Description			Remarks
C308	1-126-206-11	ELECT CHIP	100uF	20%	6.3V
C309	1-162-970-11	CERAMIC CHIP	0.01uF	10%	25V
C310	1-162-927-11	CERAMIC CHIP	100PF	5%	50V
C311	1-162-970-11	CERAMIC CHIP	0.01uF	10%	25V
C312	1-110-563-11	CERAMIC CHIP	0.068uF	10%	16V
C313	1-164-677-11	CERAMIC CHIP	0.033uF	10%	16V
C314	1-162-970-11	CERAMIC CHIP	0.01uF	10%	25V
C315	1-162-970-11	CERAMIC CHIP	0.01uF	10%	25V
C316	1-162-968-11	CERAMIC CHIP	0.0047uF	10%	50V
C317	1-107-826-11	CERAMIC CHIP	0.1uF	10%	16V
C318	1-162-968-11	CERAMIC CHIP	0.0047uF	10%	50V
C319	1-162-970-11	CERAMIC CHIP	0.01uF	10%	25V
C320	1-162-968-11	CERAMIC CHIP	0.0047uF	10%	50V
C321	1-162-970-11	CERAMIC CHIP	0.01uF	10%	25V
C322	1-162-970-11	CERAMIC CHIP	0.01uF	10%	25V
C323	1-162-970-11	CERAMIC CHIP	0.01uF	10%	25V
C324	1-107-826-11	CERAMIC CHIP	0.1uF	10%	16V
C325	1-162-970-11	CERAMIC CHIP	0.01uF	10%	25V
C326	1-162-970-11	CERAMIC CHIP	0.01uF	10%	25V
C327	1-162-970-11	CERAMIC CHIP	0.01uF	10%	25V
C328	1-162-970-11	CERAMIC CHIP	0.01uF	10%	25V
C329	1-162-970-11	CERAMIC CHIP	0.01uF	10%	25V
C330	1-162-968-11	CERAMIC CHIP	0.0047uF	10%	50V
C332	1-162-970-11	CERAMIC CHIP	0.01uF	10%	25V
C333	1-162-970-11	CERAMIC CHIP	0.01uF	10%	25V
C334	1-162-970-11	CERAMIC CHIP	0.01uF	10%	25V
C335	1-162-970-11	CERAMIC CHIP	0.01uF	10%	25V
C337	1-162-970-11	CERAMIC CHIP	0.01uF	10%	25V
C338	1-162-970-11	CERAMIC CHIP	0.01uF	10%	25V
C339	1-162-970-11	CERAMIC CHIP	0.01uF	10%	25V
C340	1-162-970-11	CERAMIC CHIP	0.01uF	10%	25V
C343	1-162-970-11	CERAMIC CHIP	0.01uF	10%	25V
C344	1-162-970-11	CERAMIC CHIP	0.01uF	10%	25V
C401	1-124-779-00	ELECT CHIP	10uF	20%	16V
C402	1-124-779-00	ELECT CHIP	10uF	20%	16V
C403	1-162-970-11	CERAMIC CHIP	0.01uF	10%	25V
C404	1-126-193-11	ELECT	1uF	20%	50V
C405	1-126-246-11	ELECT CHIP	220uF	20%	4V
C406	1-124-779-00	ELECT CHIP	10uF	20%	16V
C407	1-162-970-11	CERAMIC CHIP	0.01uF	10%	25V
C408	1-162-970-11	CERAMIC CHIP	0.01uF	10%	25V
C410	1-162-970-11	CERAMIC CHIP	0.01uF	10%	25V
C412	1-162-970-11	CERAMIC CHIP	0.01uF	10%	25V
C413	1-162-970-11	CERAMIC CHIP	0.01uF	10%	25V
C415	1-162-970-11	CERAMIC CHIP	0.01uF	10%	25V
C416	1-162-970-11	CERAMIC CHIP	0.01uF	10%	25V
C417	1-162-970-11	CERAMIC CHIP	0.01uF	10%	25V
C418	1-162-970-11	CERAMIC CHIP	0.01uF	10%	25V
C420	1-107-826-11	CERAMIC CHIP	0.1uF	10%	16V
C422	1-162-970-11	CERAMIC CHIP	0.01uF	10%	25V
C423	1-162-970-11	CERAMIC CHIP	0.01uF	10%	25V
C425	1-162-970-11	CERAMIC CHIP	0.01uF	10%	25V
C426	1-162-970-11	CERAMIC CHIP	0.01uF	10%	25V
C427	1-107-826-11	CERAMIC CHIP	0.1uF	10%	16V
C428	1-162-970-11	CERAMIC CHIP	0.01uF	10%	25V

Ref. No.	Part No.	Description			Remarks
C429	1-162-970-11	CERAMIC CHIP	0.01uF	10%	25V
C431	1-162-970-11	CERAMIC CHIP	0.01uF	10%	25V
C432	1-162-970-11	CERAMIC CHIP	0.01uF	10%	25V
C433	1-162-970-11	CERAMIC CHIP	0.01uF	10%	25V
C435	1-162-970-11	CERAMIC CHIP	0.01uF	10%	25V
C436	1-162-970-11	CERAMIC CHIP	0.01uF	10%	25V
C438	1-162-970-11	CERAMIC CHIP	0.01uF	10%	25V
C439	1-162-970-11	CERAMIC CHIP	0.01uF	10%	25V
C441	1-162-970-11	CERAMIC CHIP	0.01uF	10%	25V
					(AEP,UK,AUS,NZ,HK,SP)
C442	1-162-970-11	CERAMIC CHIP	0.01uF	10%	25V
					(AEP,UK,AUS,NZ,HK,SP)
C446	1-162-970-11	CERAMIC CHIP	0.01uF	10%	25V
C447	1-162-970-11	CERAMIC CHIP	0.01uF	10%	25V
					(AEP,UK,AUS,NZ,HK,SP)
C449	1-107-826-11	CERAMIC CHIP	0.1uF	10%	16V
C452	1-107-826-11	CERAMIC CHIP	0.1uF	10%	16V
C501	1-126-205-11	ELECT CHIP	47uF	20%	6.3V
C502	1-128-992-21	ELECT CHIP	47uF	20%	25V
C503	1-128-994-21	ELECT CHIP	47uF	20%	10V
C504	1-128-994-21	ELECT CHIP	47uF	20%	10V
C505	1-128-992-21	ELECT CHIP	47uF	20%	25V
C506	1-137-765-21	ELECT	47uF	20%	16V
C507	1-128-994-21	ELECT CHIP	47uF	20%	10V
C508	1-128-995-21	ELECT CHIP	100uF	20%	10V
C602	1-137-765-21	ELECT	47uF	20%	16V
C603	1-137-765-21	ELECT	47uF	20%	16V
C605	1-124-779-00	ELECT CHIP	10uF	20%	16V
C606	1-127-715-91	CERAMIC CHIP	0.22uF	10%	16V
C611	1-162-970-11	CERAMIC CHIP	0.01uF	10%	25V
C612	1-126-204-11	ELECT CHIP	47uF	20%	16V
C613	1-162-970-11	CERAMIC CHIP	0.01uF	10%	25V
C624	1-117-681-11	ELECT CHIP	100uF	20%	16V
C625	1-117-681-11	ELECT CHIP	100uF	20%	16V
C626	1-126-193-11	ELECT	1uF	20%	50V
					(AEP,UK,AUS,NZ)
C627	1-126-193-11	ELECT	1uF	20%	50V
C702	1-162-970-11	CERAMIC CHIP	0.01uF	10%	25V
C704	1-162-970-11	CERAMIC CHIP	0.01uF	10%	25V
C706	1-162-964-11	CERAMIC CHIP	0.001uF	10%	50V
C707	1-162-970-11	CERAMIC CHIP	0.01uF	10%	25V
C708	1-162-970-11	CERAMIC CHIP	0.01uF	10%	25V
C709	1-162-970-11	CERAMIC CHIP	0.01uF	10%	25V
C710	1-162-970-11	CERAMIC CHIP	0.01uF	10%	25V
C711	1-162-970-11	CERAMIC CHIP	0.01uF	10%	25V
C713	1-162-970-11	CERAMIC CHIP	0.01uF	10%	25V
C714	1-162-970-11	CERAMIC CHIP	0.01uF	10%	25V
C716	1-162-970-11	CERAMIC CHIP	0.01uF	10%	25V
		< CONNECTOR >			
* CN103	1-770-470-21	PIN, CONNECTOR (PC BOARD) 6P			
CN104	1-770-305-11	CONNECTOR, FFC/FPC 10P			
CN201	1-778-274-11	CONNECTOR, FFC/FPC 13P			
CN203	1-815-507-21	CONNECTOR, FFC/FPC 26P			
CN204	1-779-935-11	CONNECTOR, FFC/FPC 9P			
CN501	1-815-459-21	CONNECTOR, BOARD TO BOARD 15P			
CN603	1-770-305-11	CONNECTOR, FFC/FPC 10P			
CN604	1-784-685-11	CONNECTOR, FFC/FPC 20P			
CN701	1-779-526-11	CONNECTOR, FFC/FPC 6P			
CN702	1-778-772-11	CONNECTOR, FFC/FPC 7P			

Ref. No.	Part No.	Description	Remarks
CN703	1-779-353-21	CONNECTOR, FFC/FPC 5P	
		< DIODE >	
D207	8-719-069-29	DIODE RB520S-30TE61	
D208	8-719-069-29	DIODE RB520S-30TE61	
D209	8-719-069-29	DIODE RB520S-30TE61	
D601	8-719-988-61	DIODE 1SS355TE-17	
D602	8-719-914-44	DIODE DAP202K-T-146	(AEP,UK,AUS,NZ)
D603	8-719-914-44	DIODE DAP202K-T-146	
D604	8-719-914-43	DIODE DAN202K-T-146	
D701	8-719-914-43	DIODE DAN202K-T-146	
		< FERRITE BEAD >	
FB101	1-469-876-11	FERRITE 0UH	
FB401	1-469-876-11	FERRITE 0UH	
FB402	1-500-283-11	FERRITE 0UH	
FB403	1-500-283-11	FERRITE 0UH	
FB404	1-500-283-11	FERRITE 0UH	
FB405	1-500-283-11	FERRITE 0UH	
FB406	1-500-283-11	FERRITE 0UH	
FB407	1-500-283-11	FERRITE 0UH	
		< FILTER >	
FL101	1-234-177-21	FERRITE 0UH	
FL102	1-234-177-21	FERRITE 0UH	
FL103	1-234-177-21	FERRITE 0UH	
FL106	1-234-177-21	FERRITE 0UH	
FL201	1-234-177-21	FERRITE 0UH	
FL402	1-234-177-21	FERRITE 0UH	
FL403	1-234-177-21	FERRITE 0UH	
FL404	1-234-177-21	FERRITE 0UH	
		< IC >	
IC101	8-759-641-86	IC BR24C16F-E2	
IC103	6-701-877-01	IC SM8707EV-G-E2	
IC104	6-701-837-01	IC MB91307RPFV-G-BND-E1	
IC107(IC106)	6-802-116-01	IC MR27V1602E-CHTPZ04B	(US,CND,MX,AR)
IC107(IC106)	6-802-117-01	IC MR27V3202F-7MTPZ04B	(AEP,UK,AUS,NZ,HK,SP)
IC201	6-701-700-01	IC SP3728ACB	
IC202	6-701-878-01	IC FAN8034L	
IC203	8-759-040-83	IC BA6287F-E2	
IC301	6-701-876-01	IC CXD9703R	
IC302	6-702-302-01	IC TK11133CSCL-G	
IC303	8-759-683-75	IC MSM51V8160F-60TSKR1	
IC401	6-702-300-01	IC TK11118CSCL-G	
IC402	6-702-302-01	IC TK11133CSCL-G	
IC403	8-752-416-45	IC CXD1935Q	
IC404	6-702-610-01	IC MSM56V16160F-10T47M1	
IC405	6-702-610-01	IC MSM56V16160F-10T47M1	(AEP,UK,AUS,NZ,HK,SP)
IC601	6-701-565-01	IC CXD9627A-E2	
IC602	8-759-711-59	IC NJM78L05UA-TE1	
IC701	6-801-934-01	IC TMP86CK74AFG-4F00	
IC702	6-702-821-01	IC R3112N421A-TR-FA	
IC704	8-759-491-47	IC TC74VHCT08AFT(EL)	

MB-106

Ref. No.	Part No.	Description			Remarks
		< COIL >			
L201	1-412-031-11	INDUCTOR CHIP	47uH		
L202	1-412-031-11	INDUCTOR CHIP	47uH		
L501	1-419-354-21	INDUCTOR	22uH		
L502	1-412-052-21	INDUCTOR	1uH		
		< TRANSISTOR >			
Q201	8-729-903-46	TRANSISTOR	2SB1132-T100-QR		
Q202	8-729-903-46	TRANSISTOR	2SB1132-T100-QR		
Q204	8-729-905-34	TRANSISTOR	2SC4081T106Q		
Q601	8-729-424-02	TRANSISTOR	2SB709A-QRS-TX		
Q602	8-729-230-49	TRANSISTOR	2SC2712-YG-TE85L		
Q603	8-729-049-31	TRANSISTOR	2SB710A-RTX		
Q604	8-729-402-42	TRANSISTOR	UN5213-TX(AEP,UK,AUS,NZ)		
Q605	8-729-402-42	TRANSISTOR	UN5213-TX		
Q608	8-729-422-48	TRANSISTOR	UN5217-TX(AEP,UK,AUS,NZ)		
Q609	8-729-422-48	TRANSISTOR	UN5217-TX		
Q610	8-729-424-02	TRANSISTOR	2SB709A-QRS-TX (AEP,UK,AUS,NZ)		
Q611	8-729-424-02	TRANSISTOR	2SB709A-QRS-TX		
Q701	8-729-015-76	TRANSISTOR	UN5211-TX		
Q702	8-729-402-42	TRANSISTOR	UN5213-TX		
Q703	8-729-424-02	TRANSISTOR	2SB709A-QRS-TX		
Q704	8-729-403-35	TRANSISTOR	UN5113-TX		
		< RESISTOR >			
R102	1-216-864-11	METAL CHIP	0	5%	1/16W
R104	1-216-809-11	METAL CHIP	100	5%	1/16W
R105	1-216-809-11	METAL CHIP	100	5%	1/16W
R107	1-216-809-11	METAL CHIP	100	5%	1/16W
R108	1-216-789-11	METAL CHIP	2.2	5%	1/16W
R110	1-216-821-11	METAL CHIP	1K	5%	1/16W
R111	1-216-809-11	METAL CHIP	100	5%	1/16W
R112	1-216-809-11	METAL CHIP	100	5%	1/16W
R113	1-216-837-11	METAL CHIP	22K	5%	1/16W
R114	1-216-821-11	METAL CHIP	1K	5%	1/16W
R117	1-216-821-11	METAL CHIP	1K	5%	1/16W
R118	1-216-845-11	METAL CHIP	100K	5%	1/16W
R119	1-216-845-11	METAL CHIP	100K	5%	1/16W
R120	1-216-821-11	METAL CHIP	1K	5%	1/16W
R121	1-216-821-11	METAL CHIP	1K	5%	1/16W
R122	1-216-809-11	METAL CHIP	100	5%	1/16W
R123	1-216-833-11	METAL CHIP	10K	5%	1/16W
R124	1-216-833-11	METAL CHIP	10K	5%	1/16W
R125	1-216-809-11	METAL CHIP	100	5%	1/16W
R126	1-216-809-11	METAL CHIP	100	5%	1/16W
R127	1-216-809-11	METAL CHIP	100	5%	1/16W
R128	1-216-809-11	METAL CHIP	100	5%	1/16W
R129	1-216-809-11	METAL CHIP	100	5%	1/16W
R130	1-216-809-11	METAL CHIP	100	5%	1/16W
R131	1-216-809-11	METAL CHIP	100	5%	1/16W
R132	1-216-864-11	METAL CHIP	0	5%	1/16W
R133	1-216-864-11	METAL CHIP	0	5%	1/16W
R134	1-216-801-11	METAL CHIP	22	5%	1/16W
R136	1-216-801-11	METAL CHIP	22	5%	1/16W
R137	1-216-801-11	METAL CHIP	22	5%	1/16W

Ref. No.	Part No.	Description			Remarks
R141	1-216-833-11	METAL CHIP	10K	5%	1/16W
R143	1-216-864-11	METAL CHIP	0	5%	1/16W
R145	1-216-864-11	METAL CHIP	0	5%	1/16W
R148	1-216-809-11	METAL CHIP	100	5%	1/16W
R150	1-216-833-11	METAL CHIP	10K	5%	1/16W
R156	1-216-833-11	METAL CHIP	10K	5%	1/16W
R157	1-216-864-11	METAL CHIP	0	5%	1/16W
R159	1-216-864-11	METAL CHIP	0	5%	1/16W
R160	1-216-864-11	METAL CHIP	0	5%	1/16W
R162	1-216-827-11	METAL CHIP	3.3K	5%	1/16W
R163	1-216-827-11	METAL CHIP	3.3K	5%	1/16W
R164	1-216-057-00	METAL CHIP	2.2K	5%	1/10W (HK,SP)
R164	1-216-075-00	METAL CHIP	12K	5%	1/10W (AEP,UK,AUS,NZ)
R164	1-216-081-00	METAL CHIP	22K	5%	1/10W (AR,MX)
R165	1-216-827-11	METAL CHIP	3.3K	5%	1/16W
R166	1-216-075-00	METAL CHIP	12K	5%	1/10W
R168	1-216-827-11	METAL CHIP	3.3K	5%	1/16W
R169	1-216-075-00	METAL CHIP	12K	5%	1/10W (AR,MX)
R169	1-216-081-00	METAL CHIP	22K	5%	1/10W (HK,SP)
R169	1-216-089-91	RES-CHIP	47K	5%	1/10W (AEP,UK,AUS,NZ)
R176	1-216-864-11	METAL CHIP	0	5%	1/16W
R177	1-216-833-11	METAL CHIP	10K	5%	1/16W (AEP,UK,AUS,NZ,HK,SP)
R178	1-216-833-11	METAL CHIP	10K	5%	1/16W
R185	1-216-821-11	METAL CHIP	1K	5%	1/16W
R187	1-216-864-11	METAL CHIP	0	5%	1/16W (AEP,UK,AUS,NZ,HK,SP)
R188	1-216-864-11	METAL CHIP	0	5%	1/16W
R189	1-216-805-11	METAL CHIP	47	5%	1/16W
R190	1-216-805-11	METAL CHIP	47	5%	1/16W
R191	1-216-809-11	METAL CHIP	100	5%	1/16W
R196	1-216-864-11	METAL CHIP	0	5%	1/16W
R201	1-216-821-11	METAL CHIP	1K	5%	1/16W
R202	1-216-821-11	METAL CHIP	1K	5%	1/16W
R203	1-216-821-11	METAL CHIP	1K	5%	1/16W
R206	1-216-829-11	METAL CHIP	4.7K	5%	1/16W
R207	1-216-809-11	METAL CHIP	100	5%	1/16W
R210	1-216-815-11	METAL CHIP	330	5%	1/16W
R211	1-216-809-11	METAL CHIP	100	5%	1/16W
R212	1-216-809-11	METAL CHIP	100	5%	1/16W
R213	1-216-833-11	METAL CHIP	10K	5%	1/16W
R214	1-216-833-11	METAL CHIP	10K	5%	1/16W
R216	1-216-821-11	METAL CHIP	1K	5%	1/16W
R217	1-216-821-11	METAL CHIP	1K	5%	1/16W
R218	1-216-846-11	METAL CHIP	120K	5%	1/16W
R219	1-216-846-11	METAL CHIP	120K	5%	1/16W
R220	1-216-847-11	METAL CHIP	150K	5%	1/16W
R221	1-216-847-11	METAL CHIP	150K	5%	1/16W
R222	1-216-842-11	METAL CHIP	56K	5%	1/16W
R223	1-216-842-11	METAL CHIP	56K	5%	1/16W
R224	1-216-850-11	METAL CHIP	270K	5%	1/16W
R225	1-216-833-11	METAL CHIP	10K	5%	1/16W

Ref. No.	Part No.	Description			Remarks
R226	1-216-853-11	METAL CHIP	470K	5%	1/16W
R227	1-216-846-11	METAL CHIP	120K	5%	1/16W
R229	1-216-833-11	METAL CHIP	10K	5%	1/16W
R230	1-216-839-11	METAL CHIP	33K	5%	1/16W
R231	1-216-855-11	METAL CHIP	680K	5%	1/16W
R232	1-216-839-11	METAL CHIP	33K	5%	1/16W
R233	1-216-853-11	METAL CHIP	470K	5%	1/16W
R234	1-216-803-11	METAL CHIP	33	5%	1/16W
R235	1-216-809-11	METAL CHIP	100	5%	1/16W
R236	1-216-803-11	METAL CHIP	33	5%	1/16W
R238	1-216-839-11	METAL CHIP	33K	5%	1/16W
R239	1-216-839-11	METAL CHIP	33K	5%	1/16W
R240	1-216-839-11	METAL CHIP	33K	5%	1/16W
R241	1-216-839-11	METAL CHIP	33K	5%	1/16W
R242	1-216-849-11	METAL CHIP	220K	5%	1/16W
R243	1-216-853-11	METAL CHIP	470K	5%	1/16W
R244	1-216-821-11	METAL CHIP	1K	5%	1/16W
R245	1-216-841-11	METAL CHIP	47K	5%	1/16W
R246	1-216-809-11	METAL CHIP	100	5%	1/16W
R248	1-216-803-11	METAL CHIP	33	5%	1/16W
R249	1-216-803-11	METAL CHIP	33	5%	1/16W
R250	1-218-895-11	METAL CHIP	100K	0.5%	1/10W
R251	1-216-841-11	METAL CHIP	47K	5%	1/16W
R252	1-216-839-11	METAL CHIP	33K	5%	1/16W
R253	1-218-889-11	METAL CHIP	56K	0.5%	1/10W
R254	1-218-895-11	METAL CHIP	100K	0.5%	1/10W
R255	1-218-889-11	METAL CHIP	56K	0.5%	1/10W
R256	1-216-809-11	METAL CHIP	100	5%	1/16W
R257	1-216-821-11	METAL CHIP	1K	5%	1/16W
R258	1-216-821-11	METAL CHIP	1K	5%	1/16W
R259	1-216-833-11	METAL CHIP	10K	5%	1/16W
R260	1-216-834-11	METAL CHIP	12K	5%	1/16W
R261	1-216-833-11	METAL CHIP	10K	5%	1/16W
R262	1-216-815-11	METAL CHIP	330	5%	1/16W
R263	1-216-861-11	METAL CHIP	2.2M	5%	1/16W
R264	1-216-845-11	METAL CHIP	100K	5%	1/16W
R265	1-216-838-11	METAL CHIP	27K	5%	1/16W
R269	1-216-833-11	METAL CHIP	10K	5%	1/16W
R270	1-216-821-11	METAL CHIP	1K	5%	1/16W
R271	1-216-833-11	METAL CHIP	10K	5%	1/16W
R274	1-216-833-11	METAL CHIP	10K	5%	1/16W
R275	1-216-833-11	METAL CHIP	10K	5%	1/16W
R276	1-216-833-11	METAL CHIP	10K	5%	1/16W
R278	1-216-825-11	METAL CHIP	2.2K	5%	1/16W
R280	1-216-797-11	METAL CHIP	10	5%	1/16W
R281	1-216-829-11	METAL CHIP	4.7K	5%	1/16W
R282	1-216-833-11	METAL CHIP	10K	5%	1/16W
R283	1-216-833-11	METAL CHIP	10K	5%	1/16W
R287	1-216-841-11	METAL CHIP	47K	5%	1/16W
R288	1-216-841-11	METAL CHIP	47K	5%	1/16W
R289	1-216-841-11	METAL CHIP	47K	5%	1/16W
R290	1-216-821-11	METAL CHIP	1K	5%	1/16W
R291	1-216-821-11	METAL CHIP	1K	5%	1/16W
R301	1-216-295-91	SHORT CHIP	0		
R302	1-216-295-91	SHORT CHIP	0		
R303	1-216-821-11	METAL CHIP	1K	5%	1/16W
R311	1-216-809-11	METAL CHIP	100	5%	1/16W
R312	1-218-831-11	METAL CHIP	220	0.5%	1/10W
R313	1-216-817-11	METAL CHIP	470	5%	1/16W
R314	1-216-817-11	METAL CHIP	470	5%	1/16W

Ref. No.	Part No.	Description			Remarks
R315	1-216-817-11	METAL CHIP	470	5%	1/16W
R316	1-216-829-11	METAL CHIP	4.7K	5%	1/16W
R317	1-216-833-11	METAL CHIP	10K	5%	1/16W
R318	1-216-817-11	METAL CHIP	470	5%	1/16W
R319	1-218-871-11	METAL CHIP	10K	0.5%	1/10W
R320	1-218-883-11	METAL CHIP	33K	0.5%	1/10W
R321	1-218-879-11	METAL CHIP	22K	0.5%	1/10W
R322	1-218-847-11	METAL CHIP	1K	0.5%	1/10W
R323	1-218-855-11	METAL CHIP	2.2K	0.5%	1/10W
R324	1-216-833-11	METAL CHIP	10K	5%	1/16W
R325	1-218-867-11	METAL CHIP	6.8K	5%	1/10W
R326	1-216-833-11	METAL CHIP	10K	5%	1/16W
R327	1-218-871-11	METAL CHIP	10K	0.5%	1/10W
R328	1-216-838-11	METAL CHIP	27K	5%	1/16W
R329	1-216-825-11	METAL CHIP	2.2K	5%	1/16W
R330	1-216-825-11	METAL CHIP	2.2K	5%	1/16W
R331	1-216-825-11	METAL CHIP	2.2K	5%	1/16W
R332	1-216-825-11	METAL CHIP	2.2K	5%	1/16W
R333	1-216-847-11	METAL CHIP	150K	5%	1/16W
R334	1-218-853-11	METAL CHIP	1.8K	0.5%	1/10W
R335	1-216-829-11	METAL CHIP	4.7K	5%	1/16W
R349	1-216-833-11	METAL CHIP	10K	5%	1/16W
R351	1-216-295-91	SHORT CHIP	0		
R352	1-216-295-91	SHORT CHIP	0		
R358	1-216-833-11	METAL CHIP	10K	5%	1/16W
R359	1-216-833-11	METAL CHIP	10K	5%	1/16W
R360	1-216-809-11	METAL CHIP	100	5%	1/16W
R401	1-216-295-91	SHORT CHIP	0		
R402	1-216-295-91	SHORT CHIP	0		
R405	1-216-809-11	METAL CHIP	100	5%	1/16W
R406	1-218-831-11	METAL CHIP	220	0.5%	1/10W
R407	1-218-831-11	METAL CHIP	220	0.5%	1/10W
R408	1-218-831-11	METAL CHIP	220	0.5%	1/10W
R409	1-218-831-11	METAL CHIP	220	0.5%	1/10W
R410	1-218-831-11	METAL CHIP	220	0.5%	1/10W
R411	1-218-831-11	METAL CHIP	220	0.5%	1/10W
R412	1-216-833-11	METAL CHIP	10K	5%	1/16W
R414	1-216-822-11	METAL CHIP	1.2K	5%	1/16W
R415	1-218-867-11	METAL CHIP	6.8K	5%	1/10W
R423	1-216-833-11	METAL CHIP	10K	5%	1/16W
R424	1-216-864-11	METAL CHIP	0	5%	1/16W
R426	1-216-833-11	METAL CHIP	10K	5%	1/16W
R428	1-216-817-11	METAL CHIP	470	5%	1/16W
R430	1-216-797-11	METAL CHIP	10	5%	1/16W
R609	1-216-817-11	METAL CHIP	470	5%	1/16W
R610	1-216-833-11	METAL CHIP	10K	5%	1/16W
R611	1-216-849-11	METAL CHIP	220K	5%	1/16W
R612	1-216-833-11	METAL CHIP	10K	5%	1/16W
R613	1-216-845-11	METAL CHIP	100K	5%	1/16W
R614	1-216-830-11	METAL CHIP	5.6K	5%	1/16W
R624	1-216-829-11	METAL CHIP	4.7K	5%	1/16W (AEP,UK,AUS,NZ)
R625	1-216-829-11	METAL CHIP	4.7K	5%	1/16W
R635	1-216-833-11	METAL CHIP	10K	5%	1/16W (AEP,UK,AUS,NZ)
R636	1-216-833-11	METAL CHIP	10K	5%	1/16W
R637	1-216-833-11	METAL CHIP	10K	5%	1/16W (AEP,UK,AUS,NZ)

POWER BLOCK (ZSSR216GA/ZSSR216HA)

Ref. No.	Part No.	Description			Remarks
R638	1-216-841-11	METAL CHIP	47K	5% 1/16W (AEP,UK,AUS,NZ)	
R639	1-216-833-11	METAL CHIP	10K	5% 1/16W	
R640	1-216-841-11	METAL CHIP	47K	5% 1/16W	
R644	1-216-833-11	METAL CHIP	10K	5% 1/16W (AEP,UK,AUS,NZ)	
R645	1-216-833-11	METAL CHIP	10K	5% 1/16W	
R706	1-216-809-11	METAL CHIP	100	5% 1/16W	
R708	1-216-841-11	METAL CHIP	47K	5% 1/16W	
R712	1-216-825-11	METAL CHIP	2.2K	5% 1/16W	
R714	1-216-829-11	METAL CHIP	4.7K	5% 1/16W	
R715	1-216-809-11	METAL CHIP	100	5% 1/16W	
R716	1-216-821-11	METAL CHIP	1K	5% 1/16W	
R717	1-216-809-11	METAL CHIP	100	5% 1/16W	
R718	1-216-809-11	METAL CHIP	100	5% 1/16W	
R719	1-216-809-11	METAL CHIP	100	5% 1/16W	
R720	1-216-809-11	METAL CHIP	100	5% 1/16W	
R721	1-216-833-11	METAL CHIP	10K	5% 1/16W	
R727	1-216-833-11	METAL CHIP	10K	5% 1/16W	
R731	1-216-845-11	METAL CHIP	100K	5% 1/16W	
R732	1-216-803-11	METAL CHIP	33	5% 1/16W	
R733	1-216-833-11	METAL CHIP	10K	5% 1/16W	
R734	1-216-810-11	METAL CHIP	120	5% 1/16W	
R738	1-216-833-11	METAL CHIP	10K	5% 1/16W	
R739	1-216-833-11	METAL CHIP	10K	5% 1/16W	
R741	1-216-833-11	METAL CHIP	10K	5% 1/16W	
R744	1-216-845-11	METAL CHIP	100K	5% 1/16W	
R747	1-216-833-11	METAL CHIP	10K	5% 1/16W	
R752	1-216-825-11	METAL CHIP	2.2K	5% 1/16W	
R755	1-216-809-11	METAL CHIP	100	5% 1/16W	
R758	1-216-809-11	METAL CHIP	100	5% 1/16W	
		< COMPOSITION CIRCUIT BLOCK >			
* RB102	1-233-270-11	NETWORK, RES (8 GANG) 10K			
RB103	1-233-576-11	RES, CHIP NETWORK 100			
RB104	1-233-576-11	RES, CHIP NETWORK 100			
RB105	1-233-576-11	RES, CHIP NETWORK 100			
RB106	1-233-576-11	RES, CHIP NETWORK 100			
RB107	1-233-576-11	RES, CHIP NETWORK 100			
RB108	1-233-576-11	RES, CHIP NETWORK 100			
RB109	1-233-576-11	RES, CHIP NETWORK 100			
RB110	1-233-576-11	RES, CHIP NETWORK 100			
RB111	1-233-576-11	RES, CHIP NETWORK 100			
		< VARIABLE RESISTOR >			
RV402	1-223-583-11	RES, ADJ, CARBON 1K			
		< VIBRATOR >			
X101	1-795-174-11	VIBRATOR, CERAMIC (16.5MHz)			
X102	1-781-867-21	VIBRATOR, CRYSTAL (27MHz)			
X701	1-767-261-21	VIBRATOR, CERAMIC (8MHz)			

Ref. No.	Part No.	Description	Remarks
		MD-89M COMPL	
		**********	
		< CONNECTOR >	
CN101	1-784-865-01	CONNECTOR,FFC(LIF(NON-ZIF))13	
* CN102	1-778-283-11	CONNECTOR, FFC/FPC 4P	
CN103	1-779-353-21	CONNECTOR, FFC/FPC 5P	
CN104	1-784-650-21	CONNECTOR 2P	
		< RESISTOR >	
R101	1-216-295-91	SHORT CHIP 0	
R102	1-216-295-91	SHORT CHIP 0	
R103	1-216-295-91	SHORT CHIP 0	
		< SWITCH >	
S102	1-529-565-41	SWITCH, PUSH (1 KEY)	
S103	1-529-566-31	SWITCH, PUSH (1 KEY)	
S104	1-529-566-31	SWITCH, PUSH (1 KEY)	
		MD-90M COMPL	
		**********	
		< CONNECTOR >	
CN301	1-779-353-21	CONNECTOR, FFC/FPC 5P	
		< SWITCH >	
S201	1-529-566-31	SWITCH, PUSH (1 KEY)	
S202	1-529-566-31	SWITCH, PUSH (1 KEY)	
S203	1-529-565-41	SWITCH, PUSH (1 KEY)	
S301	1-529-565-41	SWITCH, PUSH (1 KEY)	
		MD-91M COMPL	
		**********	
		< CONNECTOR >	
CN401	1-784-856-21	CONNECTOR, FFC(LIF(NON-ZIF))4P	
* CN402	1-770-619-11	PIN, CONNECTOR 2P	
		< SWITCH >	
S401	1-529-566-31	SWITCH, PUSH (1 KEY)	
⚠	1-468-701-11	POWER BLOCK (ZSSR216GA)(US,CND,MX)	
		**********	
⚠	1-468-702-11	POWER BLOCK (ZSSR216HA) (AEP,UK,AR,AUS,NZ,HK,SP)	
		**********	
		< FUSE >	
⚠F101	9-885-028-45	FUSE (2A/250V)	
⚠IP201	9-885-028-46	FUSE (500mA)	
⚠IP401	9-885-028-47	FUSE (630mA)	

Note :
The components identified by mark ⚠ or dotted line with mark ⚠ are critical for safety.
Replace only with part number specified.

Note :
Les composants identifiés par une marque ⚠ sont critiques pour la sécurité.
Ne les remplacer que par une pièce portant le numéro spécifié.

Ref. No.	Part No.	Description			Remarks
	A-6065-802-A	SW-377 BOARD, COMPLETE			
		**********			
		< CONNECTOR >			
* CN201	1-793-155-11	CONNECTOR, FFC/FPC 5P			
		< RESISTOR >			
R202	1-216-073-91	RES-CHIP	10K	5%	1/10W
R204	1-216-073-91	RES-CHIP	10K	5%	1/10W
		< SWITCH >			
S201	1-771-206-11	SWITCH, KEY BOARD (LED NON) (EJECT)			
S202	1-771-206-11	SWITCH, KEY BOARD (LED NON) (PLAY)			
S203	1-771-206-11	SWITCH, KEY BOARD (LED NON) (STOP)			
S204	1-771-206-11	SWITCH, KEY BOARD (LED NON) (PAUSE)			
		MISCELLANEOUS			
		**********			
⚠9	1-757-140-11	CORD, POWER (2P)(AR,AEP,SP)			
⚠9	1-823-597-11	CORD, POWER (2P)(MX,US,CND)			
⚠9	1-824-535-11	CORD, POWER (3P)(UK,AUS,NZ,HK)			
⚠152	1-468-701-11	POWER BLOCK (ZSSR216GA)(US,CND,MX)			
⚠152	1-468-702-11	POWER BLOCK (ZSSR216HA) (AEP,UK,AR,AUS,NZ,HK,SP)			
		ACCESSORIES			
		**********			
	1-477-326-11	REMOTE COMMANDER (RMT-D151A) (MX,US,CND)			
	1-477-326-31	REMOTE COMMANDER (RMT-D151E) (AEP,UK,AR,AUS,NZ,HK,SP)			
	1-770-783-21	CONNECTOR, CONVERSION 21P (AEP,UK,AUS,NZ)			
⚠	1-757-140-11	CORD, POWER (AEP,AR,SP)			
	1-823-364-21	CORD, CONNECTION AV CABLE			
⚠	1-823-597-11	CORD, POWER (MX,US,CND)			
⚠	1-824-535-11	CORD, POWER (UK,HK,AUS,NZ)			
	3-072-138-11	COVER (SANWA), BATTERY			
	3-077-370-11	MANUAL, INSTRUCTION (ENGLISH) (US,CND)			
	3-077-370-21	MANUAL, INSTRUCTION (FRENCH) (US,CND)			
	3-077-370-31	MANUAL, INSTRUCTION (SPANISH) (AR,MX)			
	3-077-370-41	MANUAL, INSTRUCTION (ENGLISH) (UK,AUS,NZ,HK,SP)			
	3-077-370-51	MANUAL, INSTRUCTION (TRADITIONAL CHINESE) (HK)			
	3-077-371-11	MANUAL, INSTRUCTION (FRENCH) (AE1)			
	3-077-371-21	MANUAL, INSTRUCTION (GERMAN) (AE1)			
	3-077-371-31	MANUAL, INSTRUCTION (ITALIAN) (AEP)			
	3-077-371-41	MANUAL, INSTRUCTION (DUTCH) (AE1)			
	3-077-371-51	MANUAL, INSTRUCTION (SPANISH) (AE2)			
	3-077-371-61	MANUAL, INSTRUCTION (PORTUGUESE)(AE2)			
	3-077-371-71	MANUAL, INSTRUCTION (DANISH) (AE2)			
	3-077-371-81	MANUAL, INSTRUCTION (FINNISH) (AE2)			
	3-077-371-91	MANUAL, INSTRUCTION (SWEDISH) (AE2)			
	3-077-706-01	SCREW, COIN			
	X-3952-871-1	STAND ASSY			

Note :	**Note :**
The components identified by mark ⚠ or dotted line with mark ⚠ are critical for safety. Replace only with part number specified.	Les composants identifiés par une marque ⚠ sont critiques pour la sécurité. Ne les remplacer que par une pièce portant le numéro spécifié.

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Home Video Company

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